Աջակցություն գյուղական համայնքներին 1988-ից
Շ Ե Ն

ՀՀ, ք. Երևան 0001
110 Նալբանդյան փ.
+374 60 499 010
info@shen.am
www.shen.am

ՇՆ- 38 21 նոյեմբերի, 2025թ.
Երևան

ՀՀ էկոնոմիկայի նախարար
Պարոն Գևորգ Պապոյանին

Հարգելի պարոն Պապոյան,

Սույնով «Շեն» բարեգործական հասարակական կազմակերպությունը հայտ է ներկայացնում՝ ընդգրկվելու ՀՀ Էկոնոմիկայի նախարարին կից հասարակական խորհրդի կազմում:

Շեն կազմակերպությունը հիմնադրվել է 1988 թվականին և գործունեություն է ծավալում Հայաստանի հեռավոր գյուղական տարածքներում: Շենի առաքելությունն է խթանել հեռավոր խոցելի գյուղական համայնքների սոցիալ-տնտեսական զարգացմանը և հզորացմանը համայնքի անդամների ակտիվ ներգրավմամբ: Շենն իր գործունեությամբ նպաստել է 2400-ից ավել հեկտար անմշակ հողերի մշակությանը, օրգանական գյուղատնեսության իրավակարգավորիչ դաշտի, ինչպես նաև առաջին օրգանական այգիների հիմնմանը, 80-ից ավել բնակավայրերում խմելու և ոռոգման ջրի համակարգերի վերականգնմանը, 60-ից ավել գյուղատնտեսական կոոպերատիվների և ոչ ֆորմալ խմբերի հզորացմանը, գյուղատնտեսական տեխնիկայի, վերամշակման և հետբերքահավաքային պահպանության հզորությունների ձեռքբերմանը:

2018 թվականից սկսած «Շեն» կազմակերպությունը ակտիվորեն ներգրավված է Հայաստանում գյուղատնտեսության ոլորտի քաղաքականությունների և իրավական դաշտի բարելավման աշխատանքներում:

Խնդրում եմ դիտարկել այս հայտը: Պահանջվող տեղեկատվությունը և փաստաթղթերը կցված են:

Հարգանքով՝

Հայկ Մինասյան
«Շեն» ԲՀԿ վարչության նախագահ

ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ
ԱՐԴԱՐԱԴԱՏՈՒԹՅԱՆ ՆԱԽԱՐԱՐՈՒԹՅՈՒՆ
ԻՐԱՎԱԲԱՆԱԿԱՆ ԱՆՁԱՆՑ ՊԵՏԱԿԱՆ ՌԵԳԻՍՏՐ
ՔԱՂՎԱԾՔ

Իրավաբանական անձանց պետական միասնական գրանցամատյանից առ՝ **2020-06-02**-ը:

«ՇԵՆ» ԲԱՐԵԳՈՐԾԱԿԱՆ
Հասարակական կազմակերպություն (ՀԿ)

Գրանցման համար	**211.171.05001**
Հիմնադրման տարի	**1991**
Գրանցման ամսաթիվ	**2009-03-03**
Գործունեության ժամկետ	**Անժամկետ**
Ստեղծման եղանակ	**Հիմնադիր(ներ)ի որոշում**
Կարգավիճակ	**Իրավաբանական անձի լուծարման գործընթացում գտնվելու կամ գործունեության (գոյության) դադարման մասին պետական միասնական գրանցամատյանում տեղեկություններ գրառված չեն:**
Իրավաբանական անձի ծածկագիր (ՁԿԴ)	**39322211**
Հարկ վճարողի հաշվառման համար (ՀՎՀՀ)	**01503283**
Սոցիալական վճարների պարտավորությունների անձնական հաշվի քարտի համար (Ապահովադրի ծածկագիր)	**43175001**
Էլ. փոստ	**shen@arminco.com**
Կայք	**www.shen.am**

Գտնվելու վայրը

Հասցե	**ՆԱԼԲԱՆԴՅԱՆ Փ. / Շ / 110 ԿԵՆՏՐՈՆ 0001 ԵՐԵՎԱՆ ՀԱՅԱՍՏԱՆ**
Հեռախոս	**10-58-96-62**

Գործադիր մարմնի ղեկավար

Պաշտոն	**Նախագահ**
Անուն Ազգանուն	**ՀԱՅԿ ՄԻՆԱՍՅԱՆ**
Անձնագրային տվյալներ	**AK0636534 2010-10-11 004**
Հասցե	**ԳՅՈՒԼԲԵՆԿՅԱՆ Փ. / Շ / 40 / 18 ԱՐԱԲԿԻՐ 0033 ԵՐԵՎԱՆ ՀԱՅԱՍՏԱՆ**

Տեղեկություններ իրավահաջորդության / իրավանախորդության վերաբերյալ

Իրավանախորդ(ներ) **գրառված չեն**

Պետական միասնական գրանցամատյանում կատարված փոփոխություններ

Գրանցման ամսաթիվ	Փոփոխություններ
2012-01-25	**Կանոնադրության թվայնացում**
2013-10-22	**Նոր վկայականի տրամադրում** **Գործադիր մարմնի ղեկավարի մասին տեղեկությունների գրանցում**
2018-02-14	**Պաշտոնական կայքի և/կամ էլ.փոստի մասին տվյալների փոփոխություն** **Կանոնադրության փոփոխություն (նոր խմբագրությամբ կանոնադրություն)**

Քաղվածքը տրամադրող՝ Արփենիկ Մելքոնյան Մերուժանի
Քաղվածքի տրամադրման ամսաթիվ՝ 2020-06-02

ՏՊԱԳՐՎԱԾ Է 2 ՕՐԻՆԱԿ

ՕՐԻՆԱԿ 1

Բաղկացած է 11 էջից

ՀԱՍՏԱՏՎԱԾ Է

«ՇԵՆ» ԲԱՐԵԳՈՐԾԱԿԱՆ ՀԱՍԱՐԱԿԱԿԱՆ
ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ԸՆԴՀԱՆՈՒՐ ԺՈՂՈՎԻ
2018 ԹՎԱԿԱՆԻ ՀՈՒՆՎԱՐԻ 26-Ի ՈՐՈՇՄԱՄԲ

ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ
ՎԱՐՉՈՒԹՅԱՆ ՆԱԽԱԳԱՀ

ստորագրություն ՀԱՅԿ ՄԻՆԱՍՅԱՆ

ԳՐԱՆՑՎԱԾ Է

ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ
ԱՐԴԱՐԱԴԱՏՈՒԹՅԱՆ ՆԱԽԱՐԱՐՈՒԹՅԱՆ
ԿՈԼԵԳԻԱՅԻ 16.09.1991թ. ԹԻՎ 48/6 ՈՐՈՇՄԱՄԲ
ՎԵՐԱԳՐԱՆՑՎԱԾ Է
ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ
ԻՐԱՎԱԲԱՆԱԿԱՆ ԱՆՁԱՆՑ ՊԵՏԱԿԱՆ
ՌԵԳԻՍՏՐԻ ԿԵՆՏՐՈՆԱԿԱՆ ՄԱՐՄՆԻ ԿՈՂՄԻՑ
03.03.2009թ. ԳՐԱՆՑՄԱՆ ԹԻՎ 211.171.05001
ՀՎՀՀ 01503283

03.03.2009թ. գրանցված կանոնադրության
թիվ 001-2 փոփոխությունը
գրանցված է Հայաստանի Հանրապետության
իրավաբանական անձանց պետական ռեգիստրի
գործակալության կողմից՝
«14» 02 2018 թվականին

ՊԵՏԱԿԱՆ ՌԵԳԻՍՏՐԻ ԳՈՐԾԱԿԱԼՈՒԹՅՈՒՆ

Ստորագրություն անուն, ազգանուն

ԿԱՆՈՆԱԴՐՈՒԹՅՈՒՆ
«ՇԵՆ» ԲԱՐԵԳՈՐԾԱԿԱՆ ՀԱՍԱՐԱԿԱԿԱՆ ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ

(նոր խմբագրություն)

Երևան - 2018թ.

1. ԸՆԴՀԱՆՈՒՐ ԴՐՈՒՅԹՆԵՐ

1.1. «Շեն» բարեգործական հասարակական կազմակերպությունը՝ գրանցված ՀՀ Արդարադատության նախարարության կոլեգիայի 16.09.1991թ. ԹԻՎ 48/6 որոշմամբ, (այսուհետ՝ Կազմակերպություն), որը հասարակական միավորման տեսակ է, որում իրենց շահերի ընդհանրության հիման վրա օրենքով սահմանված կարգով միավորվել են ֆիզիկական և / կամ իրավաբանական անձիք՝ իրենց ոչ կրոնական, հոգևոր կամ ոչ նյութական այլ պահանջմունքները բավարարելու, իրենց և այլոց իրավունքներն ու շահերը պաշտպանելու, հանրօգուտ այլ գործունեություն իրականացնելու նպատակներով, և որն ունի ոչ առևտրային կազմակերպության կարգավիճակ:

1.2. Կազմակերպությունը գործում է Հայաստանի Հանրապետության Սահմանադրության, օրենսդրության, այլ նորմատիվ-իրավական ակտերի, Հայաստանի Հանրապետության միջազգային պայմանագրերի և սույն կանոնադրության հիման վրա:

1.3. Կազմակերպության գործունեության սկզբունքներն են օրինականությունը, հրապարակայնությունը, խտրականության բացառումը, անդամության կամավորությունը, անդամների շահերի ընդհանրությունը, ինքնակառավարումը, իրավահավասարությունը, բարեխղճությունը և հաշվետվողականությունը:

1.4. Կազմակերպությունը գործում է Հայաստանի Հանրապետության ողջ տարածքում: Կազմակերպությունը կարող է գործել արտասահմանյան երկրներում՝ այդ երկրների օրենսդրությանը համապատասխան՝ ստեղծելով առանձնացված ստորաբաժանումներ:

1.5. Կազմակերպության պաշտոնական լեզուն հայերենն է: Տարբեր լեզուներով գրված տեքստերի մեկնաբանությունից ծագած որևէ անհամապատասխանության դեպքում հայերեն գրված տեքստը համարվում է որոշիչ:

1.6. Կազմակերպության լրիվ անվանումն է՝
- հայերեն՝ «Շեն» բարեգործական հասարակական կազմակերպություն, կրճատ՝ «Շեն» ԲՀԿ,
- ռուսերեն՝ Благотворительная общесвенная организация “Шен”, կրճատ՝ БОО “Шен”,
- անգլերեն՝ Charitable public organization “Shen”, կրճատ՝ “Shen” NGO:

1.7. Կազմակերպությունն իրավաբանական անձի կարգավիճակ է ձեռք բերում իր՝ պետական գրանցման պահից, ունի հայերեն, անգլերեն և ռուսերեն լեզուներով կլոր կնիք, պաշտոնաթղթեր, հաշվարկային, ընթացիկ և այլ հաշիվներ բանկերում՝ ինչպես դրամով, այնպես էլ տարադրամով:

1.8. Կազմակերպությունն ունի խորհրդանիշ, որն իրենից ներկայացնում է՝ սև հողի վրա *սպիտակ ճաքեր, որոնցից ծիլ է տվել կարմիր ծաղիկ, և խորհրդանշում է երկրի* վերածնունդը:

1.9. Կազմակերպությունն օգտվում է ՀՀ օրենսդրությամբ իրավաբանական անձի համար սահմանված բոլոր իրավունքներից և կրում է համապատասխան պարտականություններ:

1.10. Կազմակերպությունը համագործակցում է ինչպես ՀՀ պետական և ոչ պետական, արտասահմանյան և միջազգային կազմակերպությունների, այնպես էլ անհատ անձանց հետ:

1.11. Կազմակերպությունը կարող է ունենալ միջազգային կապեր, անդամակցել օտարերկրյա, միջազգային և տեղական ոչ կառավարական և ոչ առևտրային կազմակերպությունների, կնքել համաձայնագրեր և պայմանագրեր օտարերկրյա, միջազգային և տեղական ոչ կառավարական և ոչ առևտրային կազմակերպությունների հետ:

1.12. Կազմակերպությունը ՀՀ օրենսդրությամբ սահմանված կարգով կարող է հիմնել լրատվության միջոցներ, տեղեկատվություն տարածել իր գործունեության վերաբերյալ զանգվածային լրատվության միջոցներով:

1.13. Կազմակերպությունը ՀՀ օրենսդրությամբ սահմանված կարգով կարող է զբաղվել ձեռնարկատիրական գործունեությամբ:

1.14. Կազմակերպության գտվելու վայրն է ՀՀ ք. Երևան, Նալբանդյան 110 շենք:

1.15. Հասարակական կազմակերպությունը ունի առանձնացված ստորաբաժանում Լեռնային Ղարաբաղի Հանրապետությունում:

2. ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ԳՈՐԾՈՒՆԵՈՒԹՅԱՆ ՆՊԱՏԱԿՆԵՐՆ ՈՒ ԽՆԴԻՐՆԵՐԸ

2.1. Կազմակերպության նպատակներն են՝ օրենքով սահմանված կարգով՝
ա) անհատույց աջակցել ՀՀ և ԼՂՀ անապահով ու հեռավոր բնակավայրերի բնակիչների աշխատանքի և արժանապատիվ կեցության իրականացմանը,
բ) ծրագրերի իրականացման վայրերում բարենպաստ պայմաններ ստեղծել, որոնք կնպաստեն գործազրկության և աղքատության հաղթահարմանը՝ նվազեցնելու համար արտագաղթը երկրից:

2.2. «Շեն» բարեգործական հասարակական կազմակերպության խնդիրներն են՝ օրենքով սահմանված կարգով՝
ա) բարեգործական հիմունքներով աջակցել Հայաստանի Հանրապետության և Արցախի լքված ու քայքայման վտանգի տակ գտնվող գյուղերի վերականգնմանը,
բ) օժանդակել քայքայման վտանգի տակ գտնվող գյուղերին՝ նպաստելով նրանց սոցիալ-տնտեսական զարգացումը ապահովող պայմանների ստեղծմանը,
գ) տրամադրել մարդասիրական օգնություն,
դ) աջակցելով աշխատատեղեր ստեղծելուն՝ ծավալել գործունեություն՝ գյուղերը լքած տեղաբնակներին իրենց բնօրրանը վերադարձնելու համար,
ե) ծավալել մշակութային - լուսավորչական գործունեություն,

զ) իրականացնել գյուղատնտեսական առաջադեմ տեխնոլոգաների ուսուցողական ծրագրեր,
է) զարգացնել օրգանական գյուղատնտեսությունը,
ը) նպաստել գյուղական համայնքներում կոոպերատիվների կազմակերպմանը,
թ) կոորդինացնել հանրապետության առաջադեմ ուժերի գործունեությունը՝ այն նպատակաուղղելով վերը նշված գյուղերի հիմնահարցերի լուծմանը,
ժ) պաշտպանել կազմակերպության անդամների շահերը և իրավունքները,
ի) աջակցել վերականգնվող գյուղերում տնտեսական և տեխնիկական օժանդակության կազմակերպմանը,
լ) շահառուներին տրամադրել օրենքով չարգելված այլ օժանդակություն:

2□3□ Իր նպատակներն ու խնդիրներն իրականացնելու համար կազմակերպությունը համագործակցում է պետական կառավարման և տեղական ինքնակառավարման մարմինների, միջազգային և օտարերկրյա համանման կազմակերպությունների, Հայաստանի Հանրապետությունում գրանցված այլ կազմակերպությունների հետ:

2□4. Կազմակերպությունն իրավունք ունի իր կանոնադրությամբ սահմանված նպատակներին համապատասխան իրականացնել ձեռնարկատիրական գործունեություն, այդ նպատակով տնօրինել իր գույքը և գործունեության արդյունքները, ինչպես նաև օրենքով սահմանված կարգով ստեղծել առևտրային կազմակերպություն կամ դառնալ նրա մասնակից:

3. ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ԱՆԴԱՄ ԴԱՌՆԱԼՈՒ ԵՎ ԱՆԴԱՄՈՒԹՅՈՒՆԻՑ ԴՈՒՐՍ ԳԱԼՈՒ ԿԱՐԳԸ

3.1. Կազմակերպության անդամ կարող է դառնալ 18 տարին լրացած ՀՀ և օտարերկրյա ցանկացած ֆիզիկական անձ, ինչպես նաև իրավաբանական անձ, որը ընդունում է Կազմակերպության կանոնադրությամբ սահմանված նպատակները և ցանկանում է մասնակցել նրա գործունեությանը:

3.2. Կազմակերպության անդամ դառնալու ցանկություն ունեցող անձը դիմում է Կազմակերպության վարչությանը:

3.3. Կազմակերպության անդամության մեջ ընդունելու հարցը լուծում է վարչությունը՝ սույն Կանոնադրության հիման վրա:

3.4. Կազմակերպության անդամը ցանկացած ժամանակ ազատ է դուրս գալու Կազմակերպությունից: Կազմակերպության անդամությունից հեռացումը կատարվում է վարչության որոշմամբ:

3.5. Կազմակերպության անդամների համար սահմանվում է 1000 դրամ տարեկան անդամավճար:

4. ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ԱՆԴԱՄՆԵՐԻ ԻՐԱՎՈՒՆՔՆԵՐՆ ՈՒ ՊԱՐՏԱԿԱՆՈՒԹՅՈՒՆՆԵՐԸ

4.1. Կազմակերպության անդամն իրավունք ունի՝

4.1.1. կազմակերպության կանոնադրությամբ սահմանված դեպքերում և կարգով ընտրել և ընտրվել Կազմակերպության կառավարման մարմիններում,
4.1.2. ներկա գտնվել ժողովին անձամբ, իսկ իրավաբանական անձի դեպքում՝ նաև լիազորված անձի միջոցով,
4.1.3. կազմակերպության գործադիր մարմնի որոշմամբ անվճար օգտվել նրա ծառայություններից,
4.1.4. ծանոթանալ Կազմակերպության մարմինների արձանագրություններին, ստանալ նրանց ընդունած որոշումների պատճենները,
4.1.5. կազմակերպության կանոնադրությամբ նախատեսված կամ դատական կարգով բողոքարկել Կազմակերպության մարմինների որոշումները: Կազմակերպության մարմինների որոշումների բողոքարկումն անդամների կողմից իրականացվում է վերադասության կարգով: Անդամի կողմից բողոքարկումն իրականացվում է դիմում ներկայացնելու եղանակով: Դիմումը քննարկում է ժողովը: Դիմումի քննարկումը կարող է կատարվել նաև հեռակա կարգով,
4.1.6. կազմակերպությունից պահանջել տեղեկություններ, ստանալ փաստաթղթերի պատճեններ՝ վերջին 3 տարվա ընթացքում Կազմակերպության կանոնադրության փոփոխությունների, մարմինների արձանագրությունների, որոշումների, գույքի կառավարումից ստացված դրամական միջոցների վերաբերյալ, ինչպես նաև ստանալ նրա ֆինանսական հաշվետվությունների աուդիտն իրականացրած անկախ աուդիտորի եզրակացության պատճենը,
4.1.7. իրականացնել օրենքով կամ Կազմակերպության կանոնադրությամբ սահմանված այլ իրավունքներ:

4.2. Կազմակերպության անդամը պարտավոր է՝
4.2.1. կատարել Կազմակերպության կանոնադրական պահանջները և կառավարման մարմինների որոշումները,
4.2.2. բարեխղճորեն կատարել կառավարման մարմինների որոշմամբ իր վրա դրված պարտականությունները,
4.2.3. վճարել անդամավճար՝ գործադիր մարմնի կողմից սահմանված կարգով և չափով:

5. ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ԻՐԱՎՈՒՆՔՆԵՐԸ ԵՎ ՊԱՐՏԱԿԱՆՈՒԹՅՈՒՆՆԵՐԸ

5.1. Կազմակերպությունն իր կանոնադրության նպատակներին համապատասխան իրավունք ունի՝
5.1.1. իր անունից ձեռք բերել և իրականացնել գույքային և անձնական ոչ գույքային իրավունքներ, կրել պարտականություններ, դատարանում հանդես գալ որպես հայցվոր կամ պատասխանող,
5.1.2. բացել բանկային հաշիվներ Հայաստանի Հանրապետության և օտարերկրյա պետությունների բանկերում՝ Հայաստանի Հանրապետության դրամով և (կամ) արտարժույթով,
5.1.3. ստեղծել այլ կազմակերպություն կամ լինել նրա մասնակից,
5.1.4. ստեղծել առանձնացված ստորաբաժանումներ կամ հիմնարկներ,
5.1.5. տեղեկատվություն տարածել իր գործունեության մասին,

5.1.6. կազմակերպել և անցկացնել խաղաղ, առանց զենքի հավաքներ,

5.1.7. օրենքով սահմանված կարգով ներկայացնել ու պաշտպանել իր և իր անդամների, շահառուների և կամավորների իրավունքներն ու օրինական շահերն այլ կազմակերպություններում, դատարանում, պետական կառավարման և տեղական ինքնակառավարման մարմիններում,

5.1.8. համագործակցել այլ կազմակերպությունների, այդ թվում՝ միջազգային կամ օտարերկրյա կազմակերպությունների հետ, ինչպես նաև համակարգված գործունեություն ծավալելու, ընդհանուր շահեր ներկայացնելու և պաշտպանելու նպատակով այդ կազմակերպությունների հետ ստեղծել կազմակերպություն կամ անդամակցելու նրանց ստեղծած կազմակերպությանը՝ պահպանելով իր ինքնուրույնությունը և իրավաբանական անձի կարգավիճակը,

5.1.9. կատարել օրենքով չարգելված այլ գործողություն:

5.2. Կազմակերպությունը պարտավոր է՝

5.2.1. վարել իր անդամների և կամավորների հաշվառումը,

5.2.2. «Հասարակական կազմակերպությունների մասին» ՀՀ օրենքի 26-րդ հոդվածով նախատեսված դեպքում ենթարկվել պարտադիր աուդիտի,

5.2.3. պաշտոնական կայքի առկայության դեպքում հասցեի վերաբերյալ ծանուցել ՀՀ իրավաբանական անձանց պետական ռեգիստրի գործակալությանը,

5.2.4. սույն օրենքի պահանջների կատարումը ստուգելու համար Հայաստանի Հանրապետության կառավարությանն առընթեր պետական եկամուտների կոմիտեի (այսուհետ՝ Լիազոր մարմին) պատճառաբանված պահանջով ողջամիտ ժամկետում նրան տրամադրել իր կառավարման մարմինների որոշումների պատճենները կամ գործունեության մասին այլ փաստաթղթեր,

5.2.5. Կազմակերպության անդամի պահանջով ոչ ավելի, քան *պահանջի ստացման* օրվանից հետո հինգ աշխատանքային օրվա ընթացքում, նրան հնարավորություն տալ ծանոթանալու Կազմակերպության կանոնադրությանը, հիմնադիր այլ փաստաթղթերի, ժողովի որոշումներին կամ տրամադրել դիմողին թղթային կամ էլեկտրոնային եղանակով՝ պահանջի ստացման օրվանից հետո հինգ աշխատանքային օրվա ընթացքում: Սույն կետում նշված տեղեկությունները, փաստաթղթերը տրամադրելու համար կարող է գանձվել վճար, որը չի կարող գերազանցել դրանք տրամադրելու համար կատարված ծախսերը,

5.2.6. Կազմակերպության կանոնադրության փոփոխությունների, ինչպես նաև վերակազմակերպման կամ լուծարման դեպքերում՝ օրենքով սահմանված կարգով դիմել ՀՀ իրավաբանական անձանց պետական ռեգիստրի գործակալություն,

5.2.7. իր գործունեության և գույքի օգտագործման տարեկան հաշվետվությունները ներկայացնել Կազմակերպության գործադիր մարմնի հաստատմանը՝ ապահովելով այդ հաշվետվությունների հրապարակայնությունը,

5.2.8. կատարել օրենքով սահմանված այլ պարտականություններ:

5.3. Կազմակերպության մարմինները նրա անունից հանդես գալիս պետք է գործեն բարեխղճորեն և ողջամտորեն՝ ի շահ Կազմակերպության:

6. ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ԿԱՄԱՎՈՐՆԵՐԸ ԵՎ ՇԱՀԱՌՈՒՆԵՐԸ

6.1. Կազմակերպությունը կարող է իր նպատակներին համապատասխան ունենալ շահառուներ, ինչպես նաև իր աշխատանքներում ներգրավել կամավորների:

6.2. Կազմակերպության շահառուներն են ՀՀ և ԼՂՀ անապահով համայնքները:

6.3. Կազմակերպության կողմից կամավորներ ներգրավելու իրավահարաբերությունների նկատմամբ կիրառվում են «Բարեգործության մասին» Հայաստանի Հանրապետության օրենքը և Հայաստանի Հանրապետության Աշխատանքային օրենսգիրքը այնքանով, որքանով այդ կարգավորումները չեն հակասում «Հասարակական կազմակերպությունների մասին» ՀՀ օրենքին:

7. ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ԿԱՌԱՎԱՐՄԱՆ ԿԱՐԳԸ ԵՎ ԿԱՌՈՒՑՎԱԾՔԸ

7.1. Կազմակերպության կառավարման մարմիններն են ընդհանուր ժողովը, վարչությունը, որը կոլեգիալ կառավարման մարմին է, վարչության նախագահը, ով հանդիսանում է գործադիր մարմնի ղեկավար և կազմակերպության նախագահն է:

7.2. Կազմակերպության գործունեությանն առնչվող ցանկացած հարցի վերաբերյալ վերջնական որոշում կայացնելու իրավունքը պատկանում է Կազմակերպության բարձրագույն մարմնին՝ ժողովին:

7.3. Կազմակերպության հերթական ժողովը գումարվում է երեք տարին մեկ անգամ: Կազմակերպության հերթական ժողովը հրավիրում է վարչությունը՝ անդամների համատեղ հավաքի ձևով կամ հեռակա կարգով՝ հեռահաղորդակցության միջոցների կիրառմամբ՝ կազմելով համապատասխան արձանագրություն: Վարչությունը որոշում է ժողովի անցկացման օրը, ժամը և տեղը, ինչպես նաև ժողովի օրակարգի նախնական տարբերակը և այդ մասին ոչ ուշ, քան 5 օր առաջ պատվիրված նամակով կամ էլեկտրոնային եղանակով կամ զանգվածային լրատվության միջոցներով կամ օրենքով սահմանված այլ եղանակներով ծանուցում է կազմակերպության անդամներին և կառույցներին:

7.4. Կազմակերպության արտահերթ ժողովը հրավիրվում է Կազմակերպության անդամների առնվազն մեկ երրորդի կամ Նախագահի կողմից՝ անմիջականորեն կամ Վերահսկիչ հանձնաժողովի նախաձեռնությամբ:

7.5. Կազմակերպության արտահերթ ժողովը գումարվում է վերոնշյալ նախաձեռնությունից ոչ ուշ, քան 5 օրվա ընթացքում: Արտահերթ ժողով գումարելու ժամանակի և վայրի մասին ժողովի մասնակիցները ծանուցվում են արտահերթ ժողով անցկացնելու օրվանից առնվազն 5 օր առաջ:

7.6. Ժողովի բացառիկ իրավասության հարցերն են՝
   7.6.1. Կազմակերպության կանոնադրության փոփոխությունների, լրացումների կամ նոր խմբագրությամբ կանոնադրության հաստատումը,
   7.6.2. Այլ իրավաբանական անձի ստեղծման կամ այլ կազմակերպությունում Կազմակերպության մասնակցության մասին որոշման ընդունումը,

7.6.2. Կազմակերպության առանձնացված ստորաբաժանումներ կամ հիմնարկներ ստեղծելու և դրանց կանոնադրությունները հաստատելու մասին որոշումների ընդունումը,
7.6.3. Կազմակերպության կառուցվածքի հաստատումը,
7.6.4. Կազմակերպության վարչության և վարչության Նախագահի ընտրությունը և փոփոխումը,
7.6.5. Կազմակերպության վարչության Նախագահի վարձատրության կարգի և պայմանների սահմանումը,
7.6.6. Կազմակերպության աուդիտն իրականացնող անձի ընտրությունը,
7.6.7. Կազմակերպության ռազմավարության հաստատումը,
7.6.8. Երեք տարին մեկ անգամ գործադիր մարմնի կողմից ժողովի գումարմանը նախորդող տարիների ընթացքում հաստատված Կազմակերպության գործունեության և գույքի օգտագործման տարեկան հաշվետվությունների հաստատումը,
7.6.9. Կազմակերպության մարմինների՝ իրավական ակտերի պահանջներին և կանոնադրությանը հակասող որոշումների գործողության դադարեցումը,
7.6.10. Կազմակերպության վերակազմակերպման մասին որոշման ընդունումը,
7.6.11. Կազմակերպության լուծարման (բացառությամբ դատարանի վճռով լուծարվելու դեպքերի) մասին որոշման ընդունումը,
7.6.12. Օրենքով նախատեսված այլ լիազորությունների իրականացումը:

Կազմակերպության ժողովը իրավազոր է, եթե ժողովին մասնակցում են կազմակերպության անդամների կեսից ավելին: Ժողովի որոշումներն ընդունվում են ժողովի մասնակիցների ձայների պարզ մեծամասնությամբ: Ժողովի արձանագրությունը ստորագրում են ժողովի նախագահողը և քարտուղարը: Ժողովի արձանագրությունները պահպանվում են 5 տարի:

Կազմակերպության վարչությունը ընտրվում է ժողովի կողմից 3 տարի ժամկետով և իր աշխատանքները իրականացնում է նիստերի ձևով, որոնք հրավիրվում են յուրաքանչյուր ամիսը մեկ անգամ:

Վարչության անդամների 1/3-ի կամ վարչության նախագահի պահանջով կարող են հրավիրվել նաև արտահերթ նիստեր: Կազմակերպության գործադիր մարմինը կազմակերպության նախագահն է: Նախագահը ղեկավարում է կազմակերպության ընթացիկ գործունեությունը և վարում է ժողովի նիստերը:

7.7. Կազմակերպության վարչության իրավասություններն են՝
7.7.1. հասարակական կազմակերպության անդամների ընդունումն ու ազատումը անդամությունից, ինչպես նաև դրա հետ կապված վեճերի քննարկումն ու լուծումը,
7.7.2. հասարակական կազմակերպության անդամների նկատմամբ խրախուսանքների և տույժերի կիրառումը,
7.7.3. հասարակական կազմակերպության կարգապահական կանոնների և հրահանգների սահմանումը,
7.7.4. իրավաբանական անձ չհանդիսացող մարզային գրասենյակներ բացելու վերաբերյալ որոշումների ընդունումը,

7.7.5. ցանկացած հարցի քննումն ու լուծումը, բացառությամբ հասարակական կազմակերպության Ընդհանուր ժողովի բացառիկ իրավասությանը վերապահվածների:

7.8. Հասարակական կազմակերպության Վարչությունը կարող է հարցեր քննարկել և որոշումներ կայացնել, եթե նրան մասնակցում են Վարչության անդամների կեսից ավելին: Վարչության որոշումներն ընդունվում են ձայների պարզ մեծամասնությամբ:

7.9. Վարչության նախագահն ով նաև կազմակերպության նախագահն է ընտրվում է հասարակական կազմակերպության Ընդհանուր ժողովի կողմից 3 տարի ժամկետով, իրականացնում է Կազմակերպության ընթացիկ ղեկավարումը:

7.10. Վարչության նախագահի իրավասությունները ներառում են.

Կազմակերպության ընթացիկ գործունեության կառավարման, ինչպես նաև Կազմակերպության կառավարման մարմինների գործունեությունն ապահովելուն ուղղված բոլոր հարցերը:

Վարչության նախագահը Կազմակերպության կանոնադրությանը և ժողովի որոշումներին համապատասխան՝

1) ապահովում է ժողովի կամ Կազմակերպության կոլեգիալ կառավարման այլ մարմինների որոշումների կատարումը.

2) կանոնադրությամբ սահմանված կարգով և չափով տնօրինում է Կազմակերպության գույքը, այդ թվում՝ ֆինանսական միջոցները, գործարքներ է կնքում Կազմակերպության անունից.

3) ներկայացնում է Կազմակերպությունը Հայաստանի Հանրապետությունում և օտարերկրյա պետություններում.

4) տալիս է լիազորագրեր.

5) բանկերում բացում է Կազմակերպության հաշվարկային (այդ թվում՝ արտարժութային) և այլ հաշիվներ.

6) իր իրավասության սահմաններում արձակում է հրամաններ, հրահանգներ, կատարման համար տալիս է պարտադիր ցուցումներ և վերահսկում դրանց կատարումը.

7) հաստատում է Կազմակերպության հաստիքացուցակը և տարեկան ծախսերի նախահաշիվը.

8) հաստատում է Կազմակերպության գործունեությունը կանոնակարգող ներքին փաստաթղթերը, այդ թվում՝ նրա առանձնացված ստորաբաժանումների, հիմնարկների ներքին կարգապահական և այլ կանոնները.

9) հաստատում է Կազմակերպության, ինչպես նաև նրա մարմինների հաշվետվությունները և 3 տարին մեկ ներկայացնում է ժողովի հաստատմանը:

10) իրականացնում է օրենքով և Կազմակերպության կանոնադրությամբ իրեն վերապահված այլ լիազորություններ:

Վարչության նախագահը իր լիազորություններն իրականացնելիս Կազմակերպության անունից հանդես է գալիս առանց լիազորագրի:

Վարչության նախագահը օրենքով նախատեսված դեպքերում՝ կրում է օրենքով նախատեսված պատասխանատվություն օրենքների, իրավական այլ

ակտերի, Կազմակերպության կանոնադրության, ժողովի որոշումների կամ կնքված պայմանագրերի պահանջները չկատարելու կամ ոչ պատշաճ կատարելու համար:

7.11. Հասարակական կազմակերպության Վերահսկիչ հանձնաժողովը ընտրվում է Ընդհանուր ժողովի կողմից 3 տարի ժամկետով:

ա) Վերահսկիչ հանձնաժողովը հսկողություն է իրականացնում կազմակերպության ղեկավար մարմինների գործունեության նկատմամբ, ստուգում է հասարակական կազմակերպության ֆինանսական և այլ փաստաթղթերը, այդ թվում՝ հաշվեկշիռը, հետևում է գույքի պահպանմանը հասարակական կազմակերպության բարձրագույն ու ղեկավար մարմինների որոշումների կատարմանը:

բ) Վերահսկիչ հանձնաժողովը կարող է ցանկացած տվյալներ և հաշվետվություն պահանջել հասարակական կազմակերպության ղեկավարներից և այլ աշխատողներից:

գ) Վերահսկիչ հանձնաժողովը պարտավոր է իր հաշվետվությունը ներկայացնել կազմակերպության գործունեության արդյունքների, հաշվեկշռի, գույքի պահպանման և այլ ամփոփ տվյալների մասին: Վերահսկիչ հանձնաժողովը հարցեր է քննարկում և որոշում է ընդունում հանձնաժողովի անդամների առնվազն 2/3-ի մասնակցությամբ, ձայների պարզ մեծամասնությամբ:

դ) Վերահսկիչ հանձնաժողովի անդամները չեն կարող լինել կազմակերպության Վարչության անդամները և նախագահը:

8. ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ՍԵՓԱԿԱՆՈՒԹՅԱՆ ԳՈՅԱՑՄԱՆ ԱՂԲՅՈՒՐՆԵՐԸ ԵՎ ՕԳՏԱԳՈՐԾՄԱՆ ԿԱՐԳԸ

8.1. Կազմակերպության նյութական և դրամական միջոցները գոյանում են մուտքավճարներից, անդամավճարներից, տնտեսական ընկերությունների, տեղական, օտարերկրյա և միջազգային կազմակերպությունների, անհատ քաղաքացիների կողմից ստացվող նվիրաբերություններից, այդ թվում՝ դրամաշնորհներից և նվիրատվություններից, կազմակերպության ձեռնարկատիրական գործունեությունից ստացված միջոցներից, պետական բյուջեից ստացվող դրամական մուտքերից, իր ստեղծած կամ իր մասնակցությամբ այլ կազմակերպություններից ստացված միջոցներից, ինչպես նաև ՀՀ օրենսդրությամբ չարգելված այլ աղբյուրներից:

8.2. Կազմակերպությանը սեփականության իրավունքով կարող են պատկանել ՀՀ օրենսդրությամբ չարգելված սեփականության իրավունքի ցանկացած օբյեկտներ: Կազմակերպությանը պատկանող գույքը օգտագործվում է իր կանոնադրական նպատակների ու խնդիրների իրականացման համար:

8.3. Կազմակերպության ղեկավար մարմիններում ընդգրկված անձիք (բացառությամբ Կազմակերպության նախագահի) Կազմակերպության կողմից կարող են վարձատրվել Կազմակերպության նախագահի կողմից սահմանված կարգով:

9. ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ՎԵՐԱԿԱԶՄԱԿԵՐՊՈՒՄԸ, ԼՈՒԾԱՐՈՒՄԸ, ԼՈՒԾԱՐՄԱՆ ԴԵՊՔՈՒՄ ԳՈՒՅՔԻ ՕԳՏԱԳՈՐԾՈՒՄԸ

9.1. Կազմակերպությունը կարող է լուծարվել Ընդհանուր ժողովի կամ դատարանի որոշմամբ:

9.2. Ընդհանուր ժողովը կազմավորում է լուծարման հանձնաժողով և օրենքով նախատեսված կարգով սահմանում լուծարման կարգն ու ժամկետները: Կազմակերպության լուծարման ավարտին լուծարման հանձնաժողովը պարտադիր վճարումներն իրականացնելուց հետո մնացած գույքը ընդհանուր ժողովի որոշմամբ սահմանված կարգով օգտագործում է Կազմակերպության կանոնադրական նպատակների և խնդիրների իրականացման համար, իսկ եթե դա հնարավոր չէ՝ փոխանցում է պետական բյուջե:

9.3. Կազմակերպությունը կարող է վերակազմակերպվել ընդհանուր ժողովի որոշմամբ կամ օրենքով սահմանված դեպքերում դատարանի որոշմամբ՝ օրենքով սահմանված կարգով:

«ՇԵՆ» ԲԱՐԵԳՈՐԾԱԿԱՆ ՀԱՍԱՐԱԿԱԿԱՆ ԿԱԶՄԱԿԵՐՊՈՒԹՅԱՆ ԽՈՐՀՐԴԱՆԻՇԻ ՊԱՏԿԵՐԸ՝

Final Report

BOTTLENECK ANALYSIS OF AGRILOGISTICS IN SHIRAK, TAVUSH, AND LORI MARZES OF NORTHERN ARMENIA

Public Service Contract N3 Funded by Embassy of the Netherlands

June 2022 **SHEN NGO**

TABLE OF CONTENTS

List of Tables

List of Graphs

List of Figures

List of Annex

List of Abbreviations:

AHK	*German Chamber of Commerce Abroad*
AMD	*Armenian Dram*
ASME	*Agricultural Small and Medium Enterprise*
BSO	*Business Support Office*
CAGR	*Compound Annual Growth Rate*
CIS	*Commonwealth of Independent States*
DGGF	*Dutch Good Growth Fund*
DRR	*Disaster Risk Reduction*
EAEU	*Eurasian Economic Union*
ECI	*Economic Complexity Index*
EU	*European Union*
EUR	*Euro*
EU CAIA	*EU Green Agricultural Initiative in Armenia*
FAO	*Food and Agricultural Organization of the United Nations*
GDP	*Gross Domestic Product*
GTAI	*Germany Trade & Invest*
ICEX	*España Exportación eInversiones*
IFAD	*International Fund for Agricultural Development*
ISO	*International Organization for Standards*
IT	*Information Technologies*
LLC	*Limited Liability Company*
LPI	*Logistic Performance Index*
LSU	*Livestock Unit*
MFA	*Ministry of Foreign Affairs*
NACE	*Statistical Classification of Economic Activities in the European Community*
NGO	*Non-Governmental Organization*
OECD	*Organization for Economic Cooperation and Development*
ULS	*Urban Logistic Service*
UN	*United Nations*
USD	*United States Dollar*
RA	*Republic of Armenia*
RVO	*Netherlands Enterprise Agency*
SC RA	*Statistical Committee of the Republic of Armenia*
SME	*Small and Medium Enterprise*
VC	*Value Chain*
WFP	*World Food Program*
WTO	*World Trade Organization*

ACKNOWLEDGEMENT:

The authors gratefully acknowledge the contribution of all participants in the individual interviews and the group discussions. We are grateful to the heads of Marz Administrative Units of Shirak, Lori and Tavush Marzes Mrs. Nazeli Baghdasaryan, Mr. Aram Khachatryan, Mr. Hayk Ghalumyan and Shen NGO Marz Representatives for their collaborative efforts in organizing, scheduling and participating in the discussions. The study highly benefited from extensive discussions with the Deputy Minister of Economy Mr. Tigran Gabrielyan, with the Head of Food Safety Inspectorate Mr. Georgi Avetisyan. We are as well thankful to the Head of Vanadzor branch of the National Agrarian University of Armenia Mrs. Mary Grigoryan, the Managing Directors of Ijevan and SIS food processing companies, Mr. Sandro Abovyan and Mr. Armen Hakobyan for their valuable contributions.

SUMMARY:

This study aims at assessing the bottlenecks of agri logistics sector in Shirak, Tavush and Lori marzes of Northern Armenia and providing recommendations to improve the sector. That way, the study aims to support newly consolidated municipalities in the northern regions of Armenia to identify integrated value chain solutions, that will improve the logistics for perishable goods and reduce food loss and waste, improve incomes of producers. It will as well allow toexploit the export potential of the country and make the sector more attractive for foreign companies to invest in Armenia.

Prior to field study, individual interviews and group discussions, three group of stakeholders were identified and their needs were considered**.** The draft report will be shared with all stakeholder groups, the feedback will be collected and adjustments will be made.

The study identified several agri logistic marz specific bottlenecks. However, most of identified bottleneck along the supply chain are common for all study marzes. Particularly, for low farm productivity and not sufficient product quality main causes are low quality of agri inputs, small land plots and low soil quality, lack of irrigation water, and old/outdated agro machinery. In relation to postharvest loses, the main causes are not proper postharvest handling, not sufficient appropriate storages, and cold storages. There are as well marketing and sales difficulties, the missing link between producers and processors. The lack of sufficient extension service and agricultural specialists to give advice is a big challenge. The potential of existing agricultural cooperatives is not fully realized. In respect to export related bottlenecks there are identified bottlenecks on producers, SME and other exporters' level such as small production quantities, lack of knowledge about foreign market requirements, export procedures and necessary documents, limited possibilities to obtain credit, etc. and bottlenecks related to external environment and export policy such as moderate efficiency of existing export promotion, export related infrastructure, export finance.

<u>The study identified marz specific potential for further development, particularly:</u>

Tavush marz has a potential to increase export of processed food and wine, has a great potential for the production of figs for fresh and dried consumption. The climatic conditions of the marz

allow for the cultivation of subtropical crops: blood orange, persimmon, olives, pomegranate, and figs. The expansion of walnut plots is promising. The collection of wild berries, wild fruits, rosehips, and greens is widespread in the marz. Beekeeping and all bee products are promising industries for the farmers in the marz, especially for women.

Based on findings specific recommendations for future interventions are developed for governmental representatives and institutions, international donor organizations and for local NGOs.

Lori marz has a unique potential for the development of fodder production and animal husbandry. Milk-processing industry is seen as another branch having marz a potential for development. In addition, Lori marz is good for cereals and legumes for beans and peas cultivation. As lands in the are fragmented, the aim is to develop high quality agriculture - non-traditional vegetable cultivation, non-traditional berry cultivation. Collection of wild greens, mushrooms, wild fruits, berries, rosehips, walnuts has as well a great development potential in the marz. Lori marz has a potential to increase export of processed food a potential for agro-tourism, ecotourism development.

Shirak marz has large areas of land resources, arable lands, which, if properly cultivated, can yield to large volumes of production. It as well should use the resource of Gyumri Selection Centre more efficiently to increase the seed production of locally valuable varieties of wheat, barley, lentils, peas. Shirak marz has as well a potential to produce and to increase sales in local market for processed potato products, potato flour, chips, semi-finished product for fries.

1. INTRODUCTION

The transition of Armenia from centralized to a market economy began in 1990, in a complex political and socio-economic situation. The collapse of Soviet Union and disruption of previously existing economic ties brought to a sharp economic decline and increased poverty. In 1993 the gross domestic product (GDP) reached to just 47% of its 1990 level. Poverty increased dramatically at the end of the decade (World Bank, 2007).

The role of agriculture increased dramatically. The first step of reforms was the privatization of land which started in 1991 (Spoor, 2004, Lerman and Mirzakhanian, 2001). By 1993, Armenia shifted from being an industrial country to an agricultural one. As a result of land privatization, 332,608 peasant farms were created against the 860 Soviet-type solkhoz/kolkhozes (CFOA, 2003).

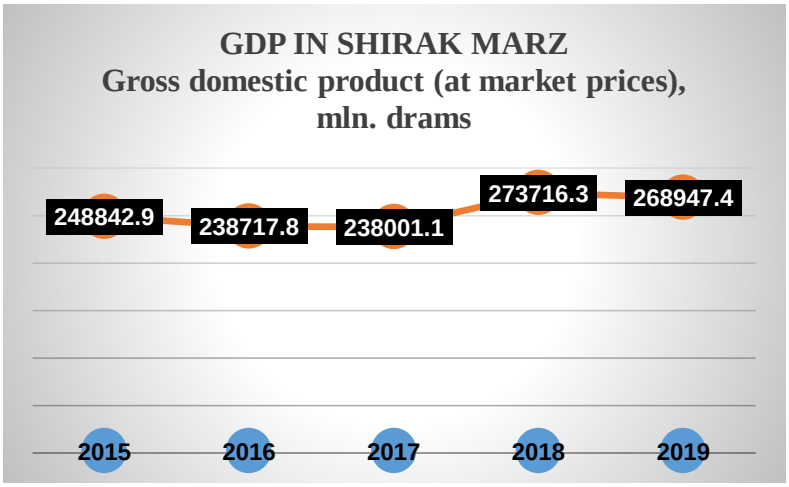
Agriculture is still one of the key sectors of the country's economy, which provides about 12% of the GDP (according to 2019 data). About 317,000 farming enterprises provide 97% of the gross agricultural output, of which each enterprise has 1.48 hectares of land. The agricultural sector accounts for 24.3% of the employed in the Republic of Armenia. (mineconomy.am)

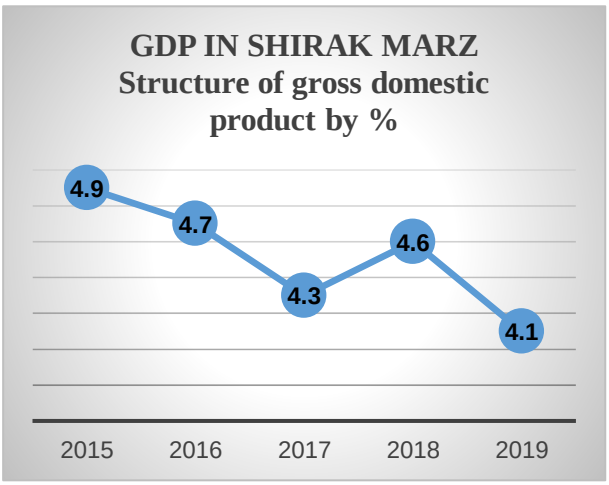
The contribution of the targeted Marzis to the national GDP for the period 2015 to 2019 (last available data, armstat.am) is presented below:

The data for 2020-2021 are under analysis and have not yet been published. As the Graphs show, over the course of 5 years, the GDP of Shirak marz increased by 8%, the GDP of Lori marz decreased by 11 %, and the GDP of Tavush marz increased by 16 %.

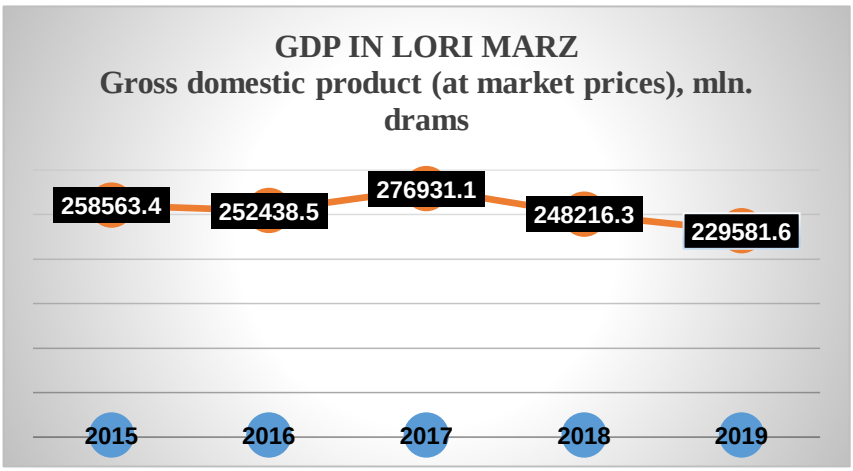
In 2019, the contribution of the GDP of the marzes to the total GDP of the Republic of Armenia was 4.1 % Shirak, 3.5 % Lori, 2 % Tavush respectively.

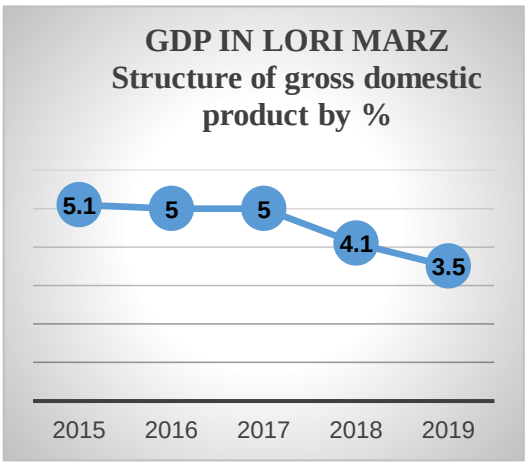
Shirak Marz



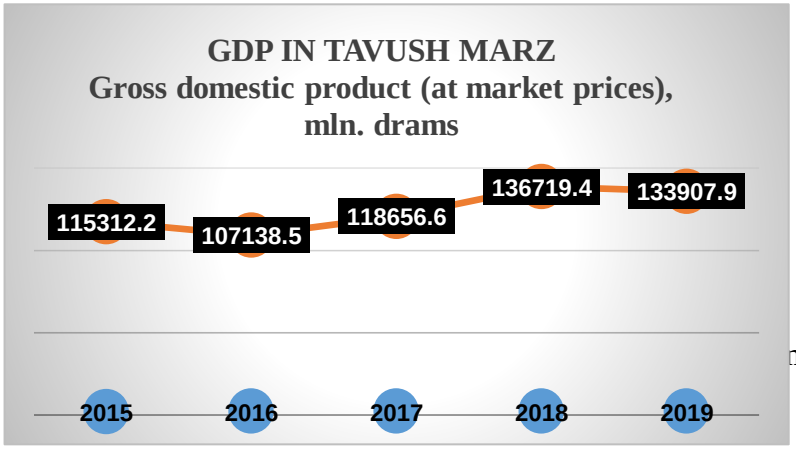


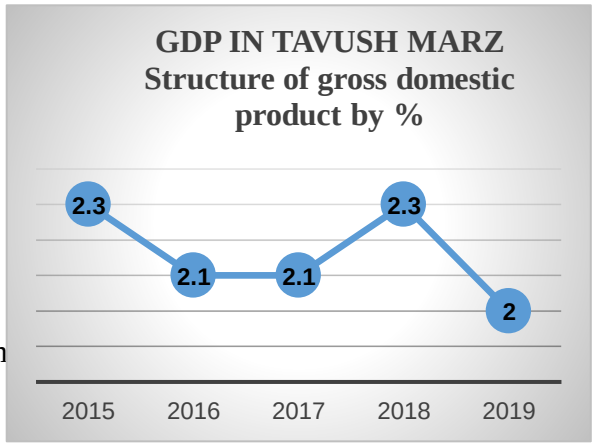
Lori Marz





Tavush Marz





m

EMPLOYMENT BY AGRICULTURAL AND NON-AGRICULTURAL SECTORS IN SHIRAK, LORI AND TAVUSH MAREZ

1000 persons

SHIRAK MARZ	Agricultural		Non-agricultural		Total	
	2019	2020	2019	2020	2019	2020
	25.7	28	63.8	53.4	89.5	81.4
LORI MARZ	Agricultural		Non-agricultural		Total	
	2019	2020	2019	2020	2019	2020
	13.4	19.3	67	71.6	80.4	90.9
TAVUSH MARZ	Agricultural		Non-agricultural		Total	
	2019	2020	2019	2020	2019	2020
	5.5	7.3	36.5	36	42.1	43.3

Investors in agriculture production benefit from the following tax incentives in RA:

- Agricultural production is exempt from VAT and profit tax.
- Exemption on payment of customs duty for importing equipment and intermediate goods from a non-Eurasian Economic Union member country that cannot be replaced by goods and equipment produced in EEU country, within the scope of investment project in the priority sector of Armenia's economy and exceptionally in the territory of Armenia.
- VAT and profit tax exemptions in border territories (list of communities approved by the Government) of Armenia.
- Exemption from VAT and profit tax for operations in Dilijan community and adjacent territories of the Tavush marz of Armenia within the scope of investment projects above approximately 4 million USD.
- Exemption from profit tax and reduction of the income tax rate (on salaries) to 10% for the IT sector startup companies.
- Medical equipment, sales of medical products, medical services are exempted from VAT payment.
- Exemption for customs duties, profit tax, VAT, property tax for the resident companies of the free economic zones. **Source:** https://enterprisearmenia.am/en/pages-businessEnvironments/tax-incentives

Agricultural insurance scheme is introduced in Armenia since September 30, 2019. The agricultural insurance program is implemented thanks to the support of the KFW Development Bank and the Federal Republic of Germany: Agricultural insurance is a pilot program planned for 2019-2023. for and is voluntary in nature., agricultural insurance has been in effect in the Republic of Armenia since 2019.

The responsible body established for the introduction of agricultural insurance is the "National Agency of Agricultural Insurers" public organization (NAAG), which will carry out the management and development of agriculture. Crops covered by the insurance program are: apricots, grapes, peaches, apples, autumn and spring cereals (wheat, barley, oats), potatoes, plums, watermelons, melons, cherries and cherries, which are insured in all regions of the Republic of Armenia.

In 2022 with state support: 5,091 contracts were sold with an insurance premium of AMD 866,338,849. 533 cases were compensated, AMD 425,988,311 was distributed to farmers. https://aina.am/

Several international organizations such us EU, UNDP, FAO, IFAD, ADA, UNICEF are implementing agriculture development projects in targeted Marzis. The summery of the projects see below:

- ***"Empowerment of local actors for development in Lori and Tavush marze"*** This initiative is one of the components of the "Empowerment of Local Actors for Development in Lori and Tavush Marzes" (LEAD) program. The latter is financed by the European Union and implemented by the FAO and the United Nations Development Program in close cooperation with the RA Ministry of Territorial Administration and Infrastructure and the RA Ministry of Economy. The program helps the population of Lori and Tavush marzes to play an active role in the process of inclusive, flexible and sustainable local development. This four-year program focuses on the localization of the LEADER methodology of the European Union in the mentioned regions. It supports community development initiatives by bringing together the efforts of local authorities, civil society and the private sector.

  The 14.6 million Euro four-year LEAD programme is comprised of three projects. The LEAD4 Shirak project co-financed by the Austrian Development Cooperation and implemented by ADA and the LEAD4Lori and Tavush regions project implemented by UNDP and FAO focus on adaptation and implementation of the EU LEADER methodology. This tried and tested approach identifies and supports community-driven local/rural development initiatives carried out through partnerships between local authorities, private sector and civil society.

  Expected results of the projects include the creation of more than 250 jobs; support to 160 rural businesses and funding of 150 migrant businesses; training of at least 500 beneficiaries on business management and operations. Overall, around 9000 people from the regions of Armenia will benefit from the Programme's activities. https://www.undp.org/armenia/press-releases/eu-%E2%80%9Clocal-empowerment-actors-development-lori-and-tavush-regions%E2%80%9D-project-enhances-rural-development

- ***International Fund for Agricultural Development (IFAD):*** Currently the following program is being implemented in Armenia with IFAD support: Infrastructure and Rural Finance Support Programme. The overall objective of the programme is to improve the economic and social status of the population in selected, most disadvantaged rural areas generating employment and income opportunities. The programme includes 4 components: Rural Finance; Rural Areas Water Supply and Irrigation Infrastructure Improvement; Farmer Awareness and Support; Programme Management.

  The total amount of the programme is USD 52.8 million, of which USD 11.4 million is the IFAD share (a loan of USD 11.0 million and a grant of USD 0.4 million). https://minfin.am/en/content/international_fund_for_agricultural_development_ifad_/#sthash.50pkxjop.dpuf

- ***The International Fund for Agricultural Development (IFAD) is RFF's main partner in*** international programs. During the period 2005-2020 the Facility implemented and continues to implement seven international programs. During the period 2005-2020 RFF financed around 11,000 beneficiaries.

  RFF designs different credit products depending on the program and market requirements. The main areas of lending are animal breeding, horticulture, greenhouse farming, leasing of

machinery and equipment, crop development, processing, poultry farming, fish farming, beekeeping, and other sectors.

The RFF representatives briefly referred to the "Infrastructure and Rural Finance Support Programme" launched in 2016, which aims to improve the socio-economic situation of the population in the project implementation area by creating employment and income generation opportunities.

RFF programs planned for 2021 and upcoming initiatives, including also a program on organization of financial processes management of nine projects envisaged by the state subsidy programs.https://mineconomy.am/en/news/2211

- ***EU-GAIA is the biggest agricultural project in Armenia funded by the European Union and co-***funded and implemented by the Austrian Development Agency and co-implemented by UNDP. The project is implemented by the Austrian Development Agency and the United Nations Development Program. The government partner of the project is the RA Ministry of Economy. The EU-GAIA program aims to contribute to the development of sustainable, innovative and marketable agribusiness.
  Project duration: 42 months from October 2019 to March 2023
  Target regions: Green agriculture - only in Shirak, Lori and Tavush marzes;
  Organic agriculture throughout Armenia;
  Total budget: €11,7 mil
  According to Ministry of Foreign Affairs RA: Armenia, as a country of the Eastern Partnership, is also included in the 2021-2027 Austrian Development Cooperation. https://www.mineconomy.am/page/1613
- "**Adolescents for Climate Action in Their Communities" (2019-2022),** funded by the Austrian Development Agency (ADA) with funds of Austrian Development Cooperation, and implemented by UNICEF in partnership with Ministries of Environment, Territorial Administration and Infrastructure, Education, Science, Culture and Sport. The project will be coordinated with consolidated communities, marzpetarans, schools and teachers, and, more importantly, adolescents.

  Current climate conditions in Armenia result in drought, heat waves, flooding, landslides, hailstorms, frost, rock falls, flash floods, mudflows and avalanches. This leaves a negative impact on the livelihoods and food security of rural communities. No one is more affected by a changing climate and its implications than children and adolescents.

  "UNICEF believes that these conditions can be slowed down. Engaging with adolescent boys and girls at community-level is key to driving climate action for a better future," said Liv Elin Indreiten, UNICEF Armenia Representative OIC. "With the support of ADA, we plan to reach and engage 28,000 adolescent boys and girls from 496 schools in 52 consolidated communities in Armenia to not only improve their knowledge on climate change but also empower them to act as climate agents in their communities through their schools." https://www.unicef.org/armenia/en/press-releases/unicef-and-austrian-development-agency-unite-engage-adolescents-climate-action

- **EU4Business "Innovative Tourism and Technology Development for Armenia":** The aim of the EU4Business "Innovative Tourism Action Grants in times of Covid-19" is to **support Armenia's tourism sector to answer Covid-19 challenges** by providing financial support (grants) to tourism businesses and consortia of tourism businesses, NGOs and foundations operating in Armenia's three northern provinces to implement innovative projects to better adapt to and recover from the current crisis. Project implemented in June 2020. Proposed

projects should contribute to the development of innovative tourism in Armenia three northern regions Tavush, Lori, Shirak.

The support provided through the EU4Business "Innovative Tourism Action Grants in times of Covid-19" aims to increase tourism organizations' productivity and competitiveness, improve tourism entrepreneurs' and workers' skills and qualifications, push for the development and upgrade of existing and new products and services, and to encourage to follow innovative marketing/re-branding approaches in order to optimally adapt to a shifting context and get prepared for changing markets, changing demand and changing ways of doing business.

All implemented projects in targeted marzes have educational component and conduct theoretical and practical trainings. Shen NGO actively works in all tree marzes conducting trainings in horticulture and cereals production level. Implemented demonstration activities and introduce post-harvest handling technologies, innovative cultivation equipment's and methods. As a results the agriculture product quality is improved, productivity increased about 15-17%. The post-harvest handling improvements reduced product loses. In addition, the income of target farmer's groups increased. Following pictures from Shen NGO implemented projects

.

The Armenian agriculture sector suffers from low productivity due to multiple factors, including limited irrigated land, inadequate infrastructure, limited access to finance, a lack of efficient technology, vulnerability to natural hazards, and underdeveloped market mechanisms. In addition, high percentage of food lose is recorded along food and value chains. (Government of Armenia, 2021, V. Urutyan 2013)

Shen NGO has been assigned by the Embassy of the Netherlands to conduct an in-depth assessment and to provide recommendations within the framework of the consulting project Public Crevice Contract N3 "Agrilogistic Study in Shirak, Lori, Tavush marzes of Northern Armenia".

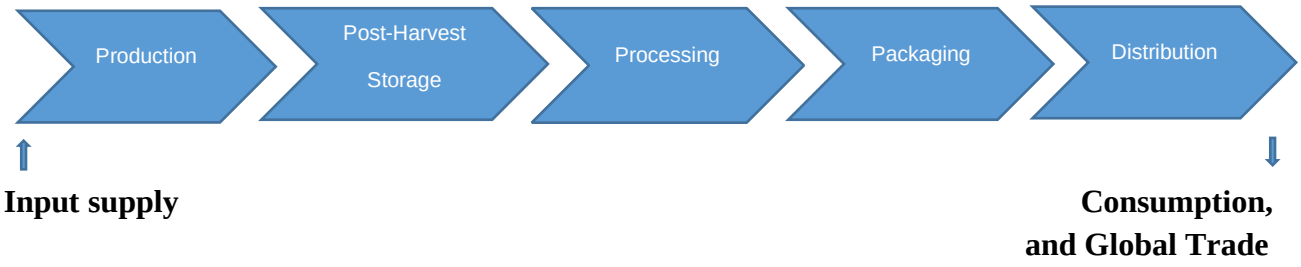
The objective of this study is to identify the bottlenecks of agri-logistical in Shirak, Tavush and Lori Marzes, in order to unlock the potential and to give recommendations how to improve the sector and to find integrated value chain solutions.

2. METHODOLOGY

2.1 PROJECT SCOPE

This study used supply chain approach, (see **Graph 1**) to analyze the bottlenecks of agri logistics on marz /country level and its impact on connecting Armenian producers to global value chain (export potential).

GRAPH 1 AGRICULTURAL FOOD CHAIN



The major assumption supported by the existing literature is that improved agro-logistics can directly increase producers' income by lowering logistical costs for producers in rural areas, one of the factors is reduced number of intermediaries of a value chain, and enhanced producers' participation in the logistics value chain, amongst others.

At the same time, better agro-logistics contributes to decreasing food loss and waste by streamlining and shortening the supply chains of agricultural products from rural to urban areas. This tight coupling of both factors from the outset is critical to ensure that the project roadmap is feasible, given stakeholders' needs and faced constraints.

Based on the results of the study, the study makes suggestions that will enable to transform food supply and value chains in study marzes into a more sustainable businesses with maximum resilience which is critical especially due to COVID-19 disruptions. Further, the study systematized the existing problems to suggest innovations and interventions needed to ensure improvements. The recommendations are given to Government and governmental institutions, to donor organizations and to local NGOs suggesting the options for interventions.

2.2 SITUATION ANALYSIS

The situation analysis was implemented in several steps. First, based on the review of available literature and policy documents the major bottlenecks were identified along the supply and value chain. Next, the major most relevant stakeholders on each of the stage of the chain were listed. In addition, the existing bottlenecks in connecting Armenian producers to the global value chains was discussed. The results of interviews and findings combined with existing literature formed the base of the report. The report presents identified marz specific bottlenecks and marz specific recommendations in separate three sections for Shirak, Lori, Tavush marzes and presents the similarities of existing bottlenecks in a separate section.

2.3 BASELINE ASSESSMENT

The baseline assessment was conducted using the principles of participation and inclusion, by involving the local community members in the assessment and planning process of SWOT analysis through the use of different tools, including meetings in relevant communities.

To be in line with the principle of leaving no one behind, a particular attention was placed to ensure that both women and men are actively engaged and are not restraint to raise their voice, so their needs, concerns and views in relation to agricultural production, the faced difficulties along the supply chain could be captured.

Interviews with relevant national, regional and local officials and experts in the food supply and value chain and on relevant policy making level, series of consultatations with different stakeholder groups, e.g. through focus group discussions, in each of the Marzes was organized.

Further, the stakeholders were conducted to organize face to face interviews, to verify the relevance and to get deeper knowledge based on the literature identified bottlenecks.

For the success of the initiative, it was important to closely coordinate interactions of local NGOs, lead farmers, local processors and target Marz representatives. The assessment process and especially identification of development direction of the target Marzes should be transparent and open for all local stakeholders at all stages.

2.4 DATA COLLECTION

The primary data was collected in Tavush, Lori and Shirak marzes. The focus group discussions were organized in all three marzes with three key stakeholder groups. Individual agricultural producers, middlemen, processors, exporters were present in focus group discussions.

The key stakeholder groups are as listed below

1. The representatives of Tavush, Lori and Shirak marzes,

2. The producers and the representatives of the agricultural and consumer cooperatives, and

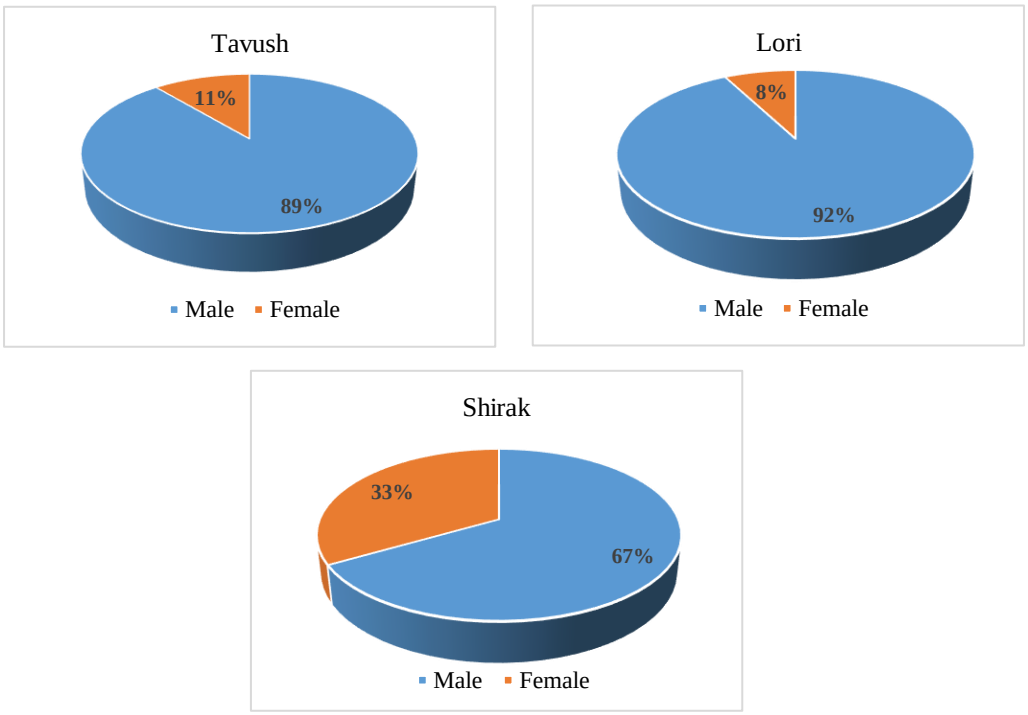
3. The representatives of agro food processors and the intermediaries/middlemen.

The list of individual members of the group discussions and individual interviews can be found in Appendixes 1, 2 and 3.

In addition to focus group discussions a semi-structured questionnaire was developed to conduct face to face interviews with agricultural producers in all three marzes. The respondents were selected from different territories of each of the marzes. Face to face interviews were conducted in each of the marz. *Further*, face to face interviews were conducted with the agricultural farm input suppliers.

The demographic information of interviewed participants is presented bellow, (see **Figure1**)

FIGURE 1 GENDER CLASSIFICATIONS BY MARZES



Source: Shen NGO survey, 2022

Overall fiftynine individual interviews were conducted with the producers. Out of fiftynine respondents nine in Tavush marz 11 % female and 89% male respectively, twentysix in Lori marz 8 % female and 92% male respectively, and twenty-four in Shirak marz 33 % female and 67% male respectively (see **Figure 1**).

In Tavush marz respondents between the age 29 to 62 years old participated in the survey, the average age equaled to 47.7 years, in Lori marz the respondents between the age 28 to 65 years old participated in the survey, the average age was 41.3 years old, and in Shirak marz respondents between the 28 to 56 years old participated in the survey, the avarage age was 38.4 years old.

TABLE 1 AVERAGE CULTIVATED LAND SIZE BY MARZES

Average Cultivated Land Size	Cultivated Culture by % of Respondents

		Vegetables	Horticulture	Cereals	Other
Tavush	1.92 ha	28%	46%	22%	4%
Lori	1.15 ha	31%	17%	44%	8%
Shirak	2.12 ha	39%	21%	45%	5%

Source: Shen NGO survey, 2022

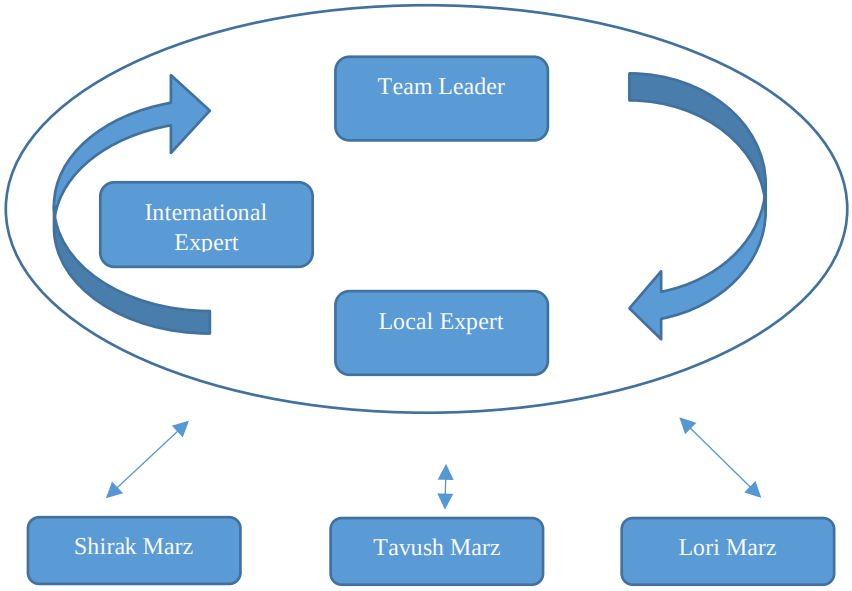
The average cultivated land size is the biggest in Shirak marz and equals to 2.12 ha, in Tavush marz it is equal 1.92 ha and in Lori marz is equal to 1.15 ha.

The results of focus group discussions combined with the results of face-to-face interviews form the basis for constructing the SWOT matrix for each of the marzes, and for identifying similarities and differences of strengths, weaknesses, opportunities and threats among the studied marzes.

2.5 PROJECT ORGANIZATION AND MANAGEMENT

The project main team consists of the team leader agriculture specialist, one export market development international expert and one marketing and business links facilitation local expert The project core team closely cooperated with the representatives of Tavush, Lori and Shirak marzes. (see **Graph 2**).

GRAPH 2 PROJECT ORGANISATION



Source: *Own presentation*

2.6 STAKEHOLDER IDENTIFICATION AND INVOLVEMENT

2.6.1 DESCRIPTION OF STAKEHOLDER GROUPS

Based on the reviewed literature and policy papers several bottlenecks exist that challenge the competitiveness and the efficiency of agriculture and limit the export potential of agri products of Armenia. We interviewed the most relevant stakeholders along the supply chain to verify our findings and to get deeper insights on existing difficulties in order to develop relevant solutions.

Identified most relevant stakeholders are listed in **Table2**.

TABLE 2 IDENTIFIED RELEVANT STAKEHOLDER GROUPS

GROUP A – Governmental Agencies, Regulators	
Ministry of Economics	The Ministry of Economy has primary responsibility for policy issues with respect to agriculture. The core of the agricultural policy based on strategic development plan till 2030 will be the increase of agricultural efficiency, increase of the food security level, introduction of modern technologies, increase of exportation volumes, increase of profitability of all entities engaged in the entire value chain of agriculture - small households, farming cooperatives, processors, and exporters. Other key bodies include the State Service for Food Safety and its subsidiary veterinary, phytosanitary, and food safety inspectorates, the National Body for Standards and Metrology under the Ministry of Economy, and the State Health Inspectorate under the Ministry of Health. The performs its functions through the organizations within the system of the Ministry: ➢ **"**National Body for Standards and Metrology" CJSC ➢ "National Accreditation Body" SNCO ➢ "Investment Support Center" Fund ➢ Export Insurance Agency of Armenia ➢ "National Center of Innovation and Entrepreneurship" SNCO ➢ "Center for Agricultural Services" SNCO[1]
Food Safety Regulator/Inspectorate	The Food Safety Inspectorate implements assessment of food products' conformity with the applicable standards, regulates the administration of veterinary and sanitary services, as well as ensures control and imposes sanctions acting on behalf of the Republic of Armenia. By the Law of the Republic of Armenia it carries out supervision and takes disciplinary actions in the mentioned spheres on behalf of the of Republic of Armenia. The most important task in the field of phytosanitary is to control the quarantine of plants in the territory of the Republic of Armenia and organization of identification and elimination of regulated, non-quarantine noxious organisms, as well as prevention of penetration and dispersion of plants' quarantine noxious organisms in the territory of the Republic of Armenia, and implementation of measures aimed at phytosanitary examination of plants, plant products, and regulated items, sampling for testing and plant protection[2].
Chamber of Commerce and Industry of Armenia	The primary mission of the Chamber is the improvement of business environment, promotion of export and investments, support to small and

[1] https://mineconomy.am/

[2] *https://snund.am/en*

	medium enterprises, providing economic growth of the economy as a final result[3].
Customs Service of Armenia	The customs service is the structure, which has a decisive importance in economic development and foreign trade management. The customs bodies, being the provider of the RA economic sovereignty, economic security, economic interests and the internal market protection, apply the norms provided by the legislation concerning the goods and vehicles transported by the customs frontier and supervise their realization. The customs service main mission is aimed to protect the economy and society. Within this framework, special attention needs to be paid to the most important challenge confrontations, such as the struggle against crimes in customs sphere and violations of customs rules. The continuously growing rates of terrorism, the improvement of contraband transportation ways and methods of drugs, weapons, goods with the cultural and historical importance caused the creation of new problems in the law enforcement field and the necessity of the state intervention to solve them immediately. In addition to these functions, the customs authorities ensure alsoAgri Finance Policy Makers/ Providers the collection of customs payments[4].
Agri Finance Policy Makers/Providers	**Central Bank:** In 2021, a number of legislative changes were introduced in the financial system of the Republic of Armenia. ➢ Following amendment and supplements made to the Civil Code of the Republic of Armenia, to the Civil Procedure Code of the Republic of Armenia, the RA Law on Compulsory Enforcement of Judicial Acts, the institute of guarantee has undergone significant changes; namely, if previously the guarantor and the debtor were carrying joint and several liability before the creditor, now the guarantor shall bear subsidiary liability, except when provided for by law (for example, when the guarantor and the debtor are members of the same family). This change is aimed at ensuring the protection of the rights of guarantors. ➢ As a result of the amendment to the "RA Law on Attracting Bank Deposits", the "RA Law on Housing Mortgage Lending", and the "RA Law on Consumer Crediting", the rates of fines imposed by the Central Bank of Armenia on the creditor for violating the requirements of the law or other legal acts have increased. The purpose of the amendment is to provide a higher level of consumer protection at banks and other financial lenders through tighter precautionary measures. ➢ An amendment to the "RA Law on the Central Bank of the Republic of Armenia" has been made with the aim to creating a centralized register of bank accounts, which all commercial banks operating in the territory of the Republic of Armenia must take part in. ➢ The purpose of the amendment and supplements to the "RA Law on Combating Money Laundering and Terrorist Financing" is to bring

[3] http://armcci.am/

[4] https://www.petekamutner.am/

	Armenia's AML/CFT framework in line with existing international requirements[5].
Regional Administrative Union (Marzpetaran)	Tavush, Lori and Shirak Regional Administration Units (Marzpetarans) of the Republic of Armenia (RA) were formed in the mid of 1990s in accordance with the RA Law on Administrative Territorial Division. The administrative relations in the regions (marzes) are regulated by the RA Constitution, RA laws and other legal acts. The Marzpetarans implement the territorial policy of the RA Government, coordinate the activities of the territorial services of the RA executive bodies and thus, act as *one of key stakeholders* in the frame of our study.
GROUP B – Input and Service Providers	
Agri Input and Technology Supplier Company	The main importers of Agri Inputs are located in Yerevan or in the regions of Armavir and Kotyak. There are about 40 leading organizations in Armenia, which supply the RA market with agricultural equipment and products[6]. Fertilizers and seeds are imported through state support programs, which are distributed to farmers through village municipalities. Import of seedlings and seeds are engaged in private individuals and organizations, most of which specialize in the import of 1 or 2 types of goods. In the beneficiary regions there are small shops selling small quantities of agricultural products, individuals who cooperate with the main importers.
Agriculture The National Insurers Agency	Agriculture The National Insurers Agency (hereinafter referred to as the Agency) is a non-governmental organization whose purpose is to coordinate the agricultural risk insurance system, including promoting and regulating the efficiency of the Agency's member insurance companies by developing rules of professional conduct for member insurance companies. The task of the Agency. ➢ Develops standard agricultural insurance products, develops and coordinates the process and conditions of providing subsidies provided by the Government of the Republic of Armenia for agricultural insurance products developed by the Agency; ➢ Carries out market research and actuarial calculations, conducts trainings for damage assessors in the field of agricultural insurance, carries out qualification of damage assessors, ➢ Carries out other activities necessary for the development of the agricultural insurance sector. https://aina.am/

[5] *https://www.cba.am/am/SitePages/Default.aspx* /

[6] *https://shen.am/publications*

Logistic Service Providers	There are 12 logistic centers in Armenia. Nine out of twelve centers are located in Yerevan, one in Abovyan, one in Ashtarak, and one in Akunk village. Twelve logistic centers are as follow: Ararat Food Factory, Mer Sarer, Spayka, Urban Logistic Service (ULS), Eco Fruits, Best Fruit Logistic Center, Rival, ICE House Logistic Complex, Brand Leader, Aghorig, Artfood and Ecokat.
Group C - Actors of the Chain	
Farmers, Farmer groups, Cooperatives, Active Women Groups	Agri food chain represents a complex network of inputs and outputs, connecting different stakeholders on different stages of the chain. Agro producers on individual level are independent farmers and conduct most of the cases small scale family farm operations. The individual farmers are joined in agricultural and consumers cooperatives to benefit from economies of scale by for example through cheaper input supply and access to modern machinery and other services. Thus, agricultural *cooperatives are important stakeholder groups* in the frame of our study. According to the data of Ministry of Economy, as of 01.2022, there are 456 registered cooperatives in Armenia, of which 119 are agricultural cooperatives and 337 are consumer cooperatives[7].
Storage and Refrigerator Holders	The role of farms in the food value chain is very important, as the main units of food processing, export, canning are located in Yerevan or the surrounding area. The main requirement of all processors and exporters is the procurement of quality food and raw materials. The demand for refrigeration facilities in the beneficiary regions is very high, there are no units providing such services in the region either. Large cold storage facilities for fresh fruits and vegetables are located only near large cities.
Processors	Agro food processors, often as well storage holders play an important role as primary buyers of agri products, are normally located in the same marz with producers. The middlemen often act as connecting link between the producer and storage holders or processors. The processors in the marzes act as buyers of produce collecting, processing and marketing of agri food. Thus, they are *another stakeholder group of interest* in the frame of our study.
Distributors, Middlemen	The reseller or distributor is the link between the farmer / producer and the supplier of the processed agricultural product. There are many participants in this field, many of them are specialize in selling food in one or more villages. In the wholesale markets, mainly resellers work, the actual producers do not reach the consumer. The role of this value chain player is very important in the case of small-scale production. Intermediary sellers consolidate the products of small producers and provide large-scale supply to processors, supermarkets, etc.
Exporters	Exporters of Armenian agricultural and food products connect local producers to global markets and global food and value chains. They

[7] http://www.mineconomy.am/en/84

	normally are engaged in producing various types of agricultural products. They are exporting and trading fresh fruits and vegetables to Russia, CIS countries and Europe. The processed fruits and wine are exported as well to further markets such as to the United States of America.

3. DESCRIPTION OF STUDY MARZES AND EXISTING GOVERNMENTAL PROJECTS

3.1 TAVUSH MARZ

Մարզկենտրոնը՝	*Marz centre*
ք. Իջևան	Ijevan town
Տարածաշրջանները՝	*Territories*
Իջևան	Ijevan
Դիլիջան	Dilijan
Նոյեմբերյան	Noyemberyan
Տավուշ	Tavush
Քաղաքները՝	*Towns*
Իջևան	Ijevan
Դիլիջան	Dilijan
Բերդ	Berd
Նոյեմբերյան	Noyemberyan
Այրում	Ayrum

Tavush marz is situated in the north-eastern part of the Republic of Armenia. In the Southeast the marz borders with Gegharkunik and Kotayk marzes, in the west it borders with Lori marz and Georgia, in the North and East with Azerbaidjan.

In 2020 the share of economy main branches of the Republic of Armenia Tavush marz in the total volume of correspondent branches of the republic comprised:

- Industry 1.5%
- Agriculture 4.3%
- Construction 3.0%
- Retail trade 2.3%
- Services 0.9%

Tavush marz is one of the mazes of RA with the most forest coverage. 40.3% of the marz's overall area is occupied with mixed forests.

Marz is pronounced agricultural district of the republic. In animal husbandry the main branches are cow and pig breeding and plant growing. The most developed branches are cereal and grape

growing. During last years beekeeping develops too. In the recent years, in resent years the programs are implemented to recover the orchards, horticulture has got a great reputation. In recent years, fruit gardens have been established, dominated by figs and persimmon. The most common varieties of fruits in the marz are peach, apple, pear, plum, persimmon, grape, figs, mulberry, etc.

Beekeeping is also being developed every year. The leading branch of the economy is the processing industry. From the industrial production in the region wines and preserved food are being exported. (**Source:** ARMSTAT 2022)

GROSS AGRICULTURAL OUTPUT

at current prices, bln. drams

	Total					of which										Share, %				
						Plant growing					Animal husbandry									
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Republic of Armenia	878.5	908.6	892.9	853.3	833.3	486.7	469.3	415.8	410.9	399.5	391.8	439.3	477.1	442.4	433.8	100	100	100	100	100
Tavush	39.6	39.9	39.3	37.0	35.9	16.0	13.3	11.1	10.0	9.2	23.6	26.6	28.2	27.0	26.7	4.5	4.4	4.4	4.4	4.3

Source [8]**:** armstat.am

In the marz there are several agricultural development governmental support programs that producers intensively use. The Governmental Agro-support Programs Implemented in 2021 in Tavush marz are (**Source:** Report of the Government of Armenia, 2022)

- 2459 credit units - 5.8 billion drams
- 1 smart cattle-breeding farm
- 14 had small cattle animal
- 58 agricultural machineries
- Agri-food leasing for 246 million drams
- 331 Procurement Contract
- 981 agriculture insurance contracts

3.2 LORI MARZ

Մարզկենտրոնը՝	Marz centre
ք. Վանաձոր	Vanadzor town
Տարածաշրջանները՝	***Territoires***
Սպիտակ	Spitak
Ստեփանավան	Stepanavan
Տաշիր	Tashir
Թումանյան	Tumanyan
Գուգարք	Gugark
Քաղաքները՝	***Towns***
Վանաձոր	Vanadzor
Ալավերդի	Alaverdi
Ստեփանավան	Stepanavan
Սպիտակ	Spitak
Տաշիր	Tashir
Ախթալա	Akhtala
Թումանյան	Tumanyan
Շամլուղ	Shamlugh

[8] https://armstat.am/en/

The leading economies of Lori marz are industry and agriculture. Production of cereal, potato, vegetable and animal husbandry produce is developed. In 2020 the share of economy main branches of the Republic of Armenia Lori marz in total volume of correspondent branches of the republic comprised

- Industry 5.3%
- Agriculture 8.1%
- Construction 3.8%
- Retail trade 2.5%
- Services 1.2%

GROSS AGRICULTURAL OUTPUT

at current prices, bln. drams

	Total					of which										Share, %				
						Plant growing					Animal husbandry									
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Republic of Armenia	878.5	908.6	892.9	853.3	833.3	486.7	469.3	415.8	410.9	399.5	391.8	439.3	477.1	442.4	433.8	100	100	100	100	100
Lori	69.2	79.0	73.2	68.5	67.2	24.9	29.0	21.6	21.6	20.4	44.3	50.0	51.6	46.9	46.8	7.9	8.7	8.2	8.0	8.1

In the marz there are several agricultural development governmental support programs that producers intensively use. The Governmental Agro-support Programs Implemented in 2021 in Lori marz are (**Source:** Report of the Government of Armenia, 2022)

- 1853 credit units - 3.8 billion drams
- 3 ha intensive orchards
- 1 smart cattle-breedindg farm
- 288 had large cattle animals
- 43 agricultural machineries
- Agri-food leasing for 73 million drams
- 46 Procurement Contract
- 1482 agriculture insurance contracts

3.3 SHIRAK MARZ

Shirak marz is situated in the north west of the Republic of Armenia, with Gyumri marz center. In the west, it borders Turkey; in the North, it borders Georgia, in the East Lori marz and in the South Aragatsotn marz.

GROSS AGRICULTURAL OUTPUT

at current prices, bln. drams

	Total					of which										Share, %				
						Plant growing					Animal husbandry									
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Republic of Armenia	878.5	908.6	892.9	853.3	833.3	486.7	469.3	415.8	410.9	399.5	391.8	439.3	477.1	442.4	433.8	100	100	100	100	100
Shirak	101.7	99.4	97.9	88.7	83.5	50.8	41.4	35.5	32.3	29.2	50.9	58.0	62.4	56.4	54.3	11.6	10.9	11.0	10.4	10.0

In the marz there are several agricultural development governmental support programs that producers intensively use. The Governmental Agro-support Programs Implemented in 2021 in Shirak marz are (**Source:** Report of the Government of Armenia, 2022)

- 1570 credit units - 3.2 billion drams
- 4 ha intensive orchards
- 2 smart cattle-breeding farm
- 44 agricultural machineries
- Agri-food leasing for 425 million drams
- 467 Procurement Contract
- 64 agriculture insurance contracts

4. IDENTIFIED BOTTLENECKS AND SITUATION ANALYSIS OF AGRI LOGISTICS BASED ON LITERATURE

4.1 IDENTIFIED BOTTLENECKS

A) Low Productivity as a consequence of

- *Agricultural land* - small land plots and the existence of abandoned land, no digitalis map of agricultural land
- I*rrigation systems* – there is a need to rehabilitate existing irrigation systems and to implement new/digitalized technological solutions/systems
- *Credit market* – not sufficient credit support programs, guarantee funds
- *Risk mitigation* – agricultural insurance market is still underdeveloped, broader climate adaption strategies are not in place
- Not sufficient attention to priority value chains
- Agricultural methods, technologies, machinery and equipment – traditional methods and technologies of cultivation, outdated machinery and equipment, support programs for the purchase/leasing of new machinery and equipment, introduction to new methods is needed.

B) Food Safety

Internationally recognized food safety standards – not sufficient attention to good agricultural practices (GAP), more attention to HACCP, Information and knowledge provision to public on

food safety needed.

C) Knowledge

Agricultural advisory services are not functioning efficiently. There is a need to introduce new models of the services along the food chain (for example public private partnerships, partial payment for the service by farmers, etc.)

D) Food Lose along Food Chain, in all following stages

For example, based on the study done by Urutyan 2013 the lose of cereal production on different stages of the chain amounts

Agricultural Production 15%

Post harvest handling and

Storage –5%

Processing – 6%

Packaging and

Distribution – 7%

E) Local Market and Export Potential (Questions: phytosanitary enforcement, modernized traceability and certification systems and practices, modern food safety standards, etc?)

Agricultural producers prefer to sell their produce domestically, often on the gate, on local market or in the market in Yerevan as they do not see export-oriented motivations. Most of the producers lack of knowledge especially on proper procedures. In addition, most of agricultural producers are small scale and see the difficulty to think about export.

The export market is mainly concentrated on Russia. The Commonwealth of Independent States (CIS) are another option for Armenian exporters.

4.2 SITUATION ANALYSIS OF AGRI LOGISTICS

Production

The government has introduced a 10-year strategy to drive the development of Armenia's agriculture sector focused on making agriculture more sustainable, introducing innovative solutions and new technologies, and moving Armenian agricultural products up the value chain for export abroad. More specific measures include increasing the availability of cultivable farmland, improving irrigation systems, enhancing access to finance, improving the quality of seeds and planting materials, promoting modern livestock management techniques and facilities, consolidating farms, and developing wholesale markets.

In 2020, agriculture continued a decline in output from the previous year by about four percent, primarily due to COVID-19, totaling about 12 percent of gross domestic product. The continued support from the government and measures to promote access to subsidized credit, the development of value chains and the enhancement of the productivity and efficiency of farming, such as establishing cooperatives, should reverse declines. Greater interest from the private sector in making agriculture investments and introducing new technologies could further contribute to growth.

Many vegetable, nut, fruit, and berry varieties are found in Armenia, including: green peas, black and red peppers, radishes, carrots, pumpkins, pomegranates, quince, plums, various cherry varieties, mulberries, apricots, peaches, apples, pears, walnuts, pistachios, hazelnuts, currants, raspberries, blackberries, and strawberries.

According to government reporting there are approximately 1,600 food-production companies in Armenia, including: fruit and vegetable processing, dried fruit and spice processing, grape processing, milk processing, meat processing and slaughtering, fish processing, bread baking, confectionary production, mineral and drinking water production, nonalcoholic beverage production, and alcoholic beverage production.

Leading Sub-Sectors

Within the agricultural space, food production dominates in terms of export volumes. Food products make up more than a fifth of Armenia's goods exports annually. Important segments include processed food and alcoholic beverage production, especially wine and brandy made from locally grown grapes. Armenia's principal food processing exports are alcoholic beverages, fish, cheese, canned fruits, jams, coffee, and mineral water. Some exporters also ship frozen fruits and vegetables. Armenia's soil and climate conditions, high altitude, and limited use of chemical fertilizers account for flavorful produce. Food products can be successfully delivered to international markets with modern processing and packaging technologies that are currently used to export such Armenian products as soft drinks, mineral water, alcohol, canned fruits and vegetables, milk and dairy products, meat, and meat products.

Significant recent investment has been focused on the construction of modern greenhouses, together with more advanced drip irrigation systems. Such investment has grown rapidly and yielded marked productivity gains.

Armenia has traditionally had a good reputation for high-quality alcoholic beverages, especially brandy. Approximately 90 percent of Armenia's brandy production is exported abroad, overwhelmingly to Russia.

Armenian wine has developed remarkably in recent years, spurred by an increasing recognition of Armenia as a birthplace of winemaking and several recent large investments aimed at producing high-quality wines. Armenia now has several dozen wineries, and the number has roughly doubled since 2013. The area of working vineyards has expanded dramatically in recent years, reversing declines seen after Armenia achieved independence. More than 10 million liters of wine are produced each year, roughly half of which is exported abroad. The value of wine exports has doubled in the last five years. Several wines are noted of being of particularly high quality, and the Areni noir grape has begun to attract broader international recognition[9].

Lows and regulations

Several key pieces of agricultural and food legislation include: the Law on Food Safety, Law on Veterinary Medicine, Law on Animal Feeding, Law on Phytosanitary Measures, Law on Trade and Services, Law on Ensuring Sanitary and Epidemiological Safety of the Population, Law on Ensuring Uniformity of Measurements, Law on the Protection of Consumer Rights, Law on

[9] https://www.trade.gov/country-commercial-guides/armenia-agriculture

Standardization, and the Law on Conformity Assessment. A Law on Organic Agriculture, based on Codex Alimentarius guidelines and EU regulations, stipulates requirements for labeling organic products.

The Law on Organic Agriculture, adopted in 2008, is based on the Codex Alimentarius organic guidelines and EU organic regulations. The law dictates the process of organic production and the main provisions on labelling requirements for organic products. The certification body ECOGLOBE, an Accredited Certifying Agent of the U.S. National Organic Program, operates in Armenia. There are several non-governmental organizations in Armenia that promote and support organic agriculture.

Armenia's EAEU membership has brought some areas of uncertainty and confusion, preventing Armenia from realizing agricultural trade opportunities. These include documentation requirements, sanitary and phytosanitary requirements, and burdensome export procedures. Any notional expansion of access to the Russian market is positive but is undercut by internal barriers to the free flow of goods within the EAEU and unpredictable conditions at the border crossing between Georgia and Russia.

Import and export requirements and documentation

After joining The EAEU harmonized tariffs (CET), the unified Customs Code requirements entered into force in Armenia. EAEU regulations now deal with trade in the integrated customs zone. Despite this effort at harmonization, customs clearance remains one of the main issues for foreign companies working in the Armenian market. While the main function of customs is control and statistics, Armenia still uses customs as a budget cash flow generator. According to EAEU requirements customs clearance, as a general rule, should be performed in the jurisdiction of the respective participants in foreign economic operations. For example, goods transiting to Armenia and/or Kazakhstan from foreign suppliers through Russia are customs cleared at the EAEU's external frontier in Russia. This is the same procedure for items entering Armenia and Kazakhstan destined for other countries within the EAEU. Armenia does not have common border with and EAEU members, all goods must transit through Georgia, adding complications which have yet to be fully resolved.

Customs requires importers to present a customs declaration form with a commercial invoice indicating the specifications, quantity, and value of goods being imported. In addition, to ensure that imports will be valued by the transaction method of valuation, documentation must meet the requirements enumerated in the Import Tariffs section of this guide. The State Customs Committee has implemented an on-line declaration process (Direct Trader Input or "DTI") which reduces personal contact between customs officials and importers.

Armenia maintains a national inquiry point on standards and conformity assessment matters in the Department for Quality Infrastructure of the Ministry of Economic development and Investments[10]. It is responsible for provision of all relevant information on standards and technical regulations. For more information see the Standards section in this guide [11].

[10] *https://mineconomy.am/en*

[11] *https://www.privacyshield.gov/article?id=Armenia-import-requirements-and-documentation*

Opportunities

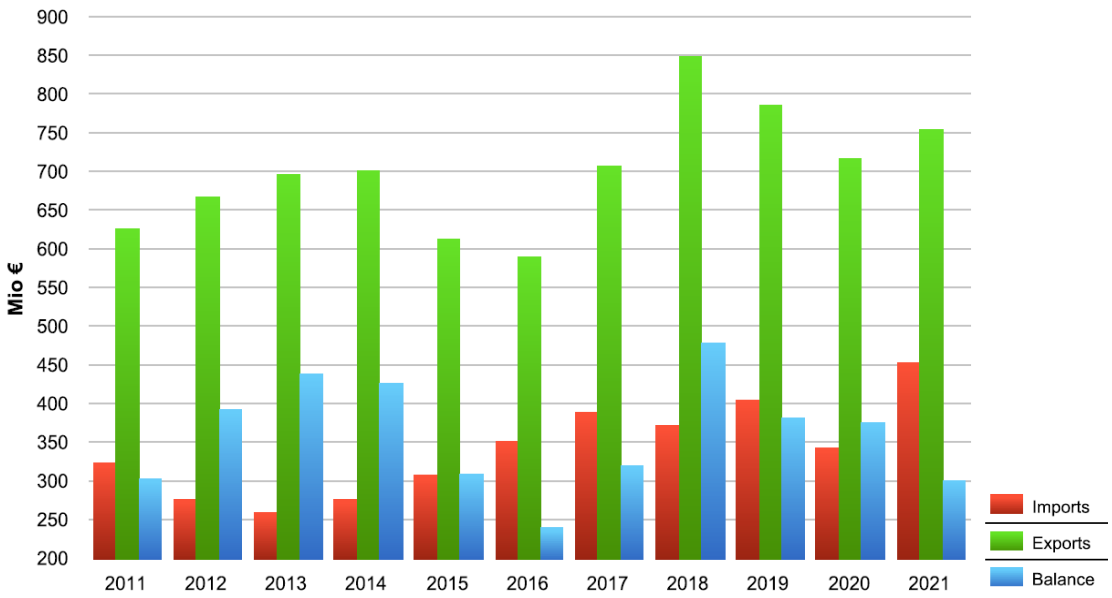
There are a number of interesting opportunities in Armenia's agricultural sector, despite the country's difficult geographical position, distance from other markets, and a relatively small domestic market with limited buying power. The government has placed a great deal of emphasis on developing the sector, to include devising policy reforms and extending benefits such as subsidized lending facilities and tax and customs exemptions. Armenia is eager to introduce more modern technology to move agricultural products up the value chain, increase exports (especially to Europe), and expand economic opportunities for rural populations.

Armenia's inability to satisfy local demand for some foodstuffs, notably wheat, through domestic production alone, means securing investment is also important for ensuring food security. Wine stands out as an exciting opportunity given the combination of Armenia's indigenous varieties, moderate land and labor costs, favorable climatic conditions, and excellent terroir [12].

The European Union currently has no trade agreements with Armenia[13], which implies higher tariffs for the export from Armenia.

The trade balance of total goods of EU trade with Armenia during the last ten years is presented bellow.

FIGURE: EUROPIAN UNION TRADE WITH ARMENIA – TOTAL GOODS



Source: Europian Commition, Directorate General for Trade, 2021

[12] https://www.trade.gov/country-commercial-guides/armenia-agriculture

[13] https://trade.ec.europa.eu/access-to-markets/en/non-eu-markets/AM

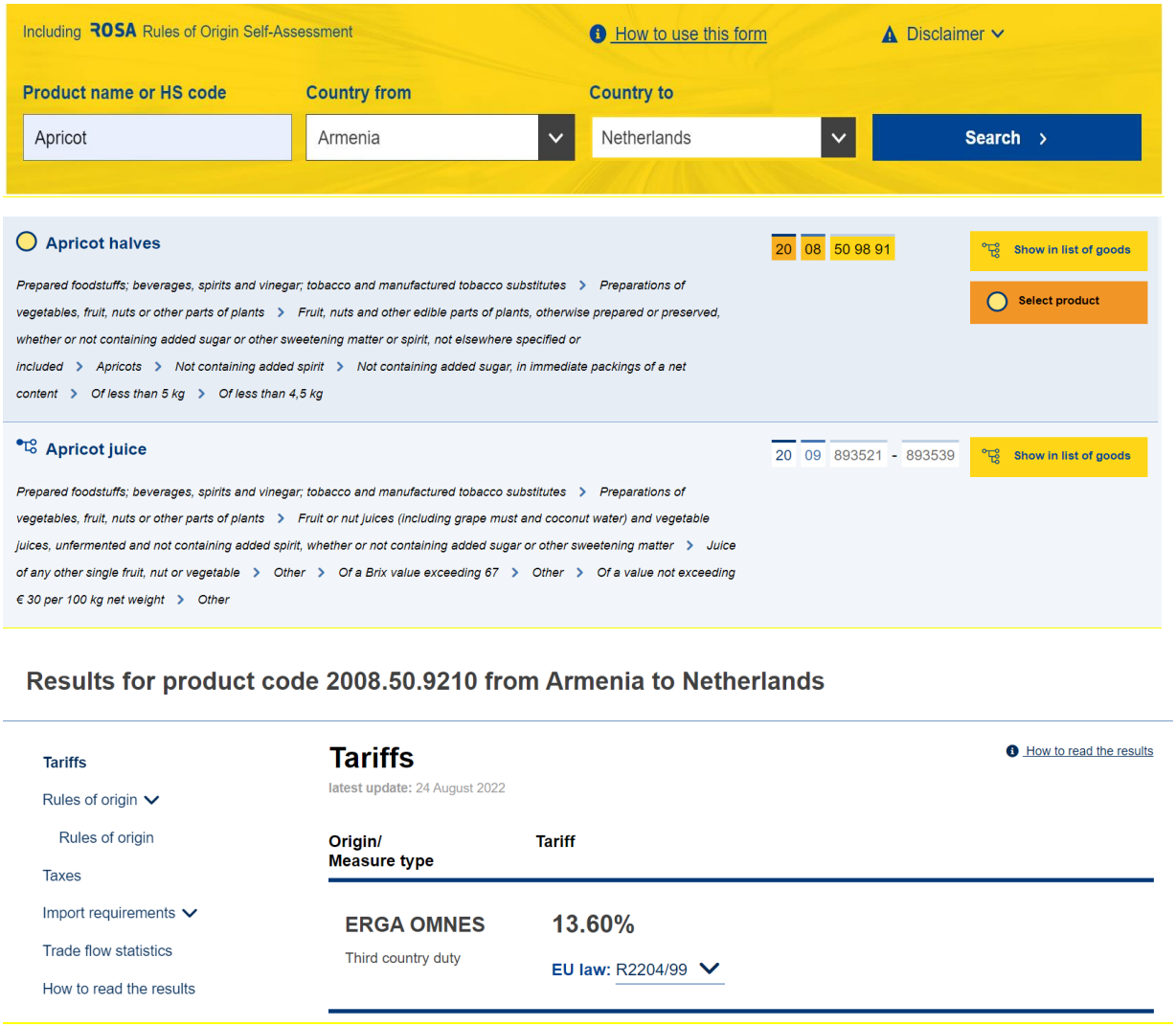
According to the custom service of Armenia *the export from Armenia to Netherlands in year 2020*, *2021* has the following characteristic

2020 Quentity	Unit	**2021** Quentity	Unit		
		8	18.4	Vegetables, fruit, nuts and other edible parts of plants, prepared or preserved by vinegar or acetic acid	
4	0	7197.4	13.6	Other vegetables prepared or preserved otherwise than by vinegar or acetic acid, not frozen (excl. preserved by sugar, and tomatoes, mushrooms and truffles)	**Huge increase**
50.8	49.8	101.1	101.4	Jams, fruit jellies, marmalades, fruit or nut purée and fruit or nut pastes, obtained by cooking, whether or not containing added sugar or other sweetening matter	**Increased around 2 times**
		3.9	8.9	Fruits, nuts and other edible parts of plants, prepared or preserved, whether or not containing added sugar or other sweetening matter or spirit (excl. prepared or preserved with vinegar, preserved with sugar but not laid in syrup, and jams, fruit jellies, marmalades, fruit purée and pastes, obtained by cooking)	
4	0	14243	26.2	Fruit juices, incl. grape must, and vegetable juices, unfermented, not containing added spirit, whether or not containing added sugar or other sweetening matter	**Huge increase**
24.2	147.4	23.6	118.2	Wine of fresh grapes, incl. fortified wines; grape must, partly fermented and of an actual alcoholic strength of > 0,5% vol or grape must with added alcohol of an actual alcoholic strength of > 0,5% vol	
1	4.7	2.8	12.3	Cider, perry, mead, saké and other fermented beverages and mixtures of fermented beverages and non-alcoholic beverages, n.e.s. (excl. beer, wine or fresh grapes, grape must, vermouth and other wine of fresh grapes flavoured with plants or aromatic substances)	**Increased around 3 times**
19	629.5	34.3	1079.7	Undenatured ethyl alcohol of an alcoholic strength of < 80%; spirits, liqueurs and other spirituous beverages (excl. compound alcoholic preparations of a kind used for the manufacture of beverages)	**Increased around 80%**
547.7	0	490.8	0.1	Copper, ores, concentrates	
196.6	0	100.6	0	Molybdenum ores and concentrates	

19.3	179.7	1.3	19.5	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts, knitted or crocheted (excl. wind-jackets and similar articles, slips, petticoats and panties, tracksuits, ski suits and swimwear)	
1	0.1	1820	22.2	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted (excl. wadded waistcoats)	
135.7	1285.9	25	331.7	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (excl. knitted or crocheted, wind-jackets and similar articles, slips, petticoats and panties, tracksuits, ski suits and swimwear)	
7.2	55.5			Women's or girls' blouses, shirts and shirt-blouses (excl. knitted or crocheted and vests)	
2	0.3	596	18	Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of leather (excl. orthopaedic footwear, skating boots with ice or roller skates attached, and toy footwear)	
6810.1	86217.6	7560.2	175320.2	Ferro-alloys	
486	720.5			Ferrous waste and scrap; remelting scrap ingots of iron or steel (excl. slag, scale and other waste from the production of iron or steel; radioactive waste and scrap; fragments of pigs, blocks or other primary forms of pig iron or spiegeleisen)	
24	120			Waste and scrap, of copper (excl. ingots or other similar unwrought shapes, of remelted copper waste and scrap, ashes and residues containing copper, and waste and scrap of primary cells, primary batteries and electric accumulators)	
2731.7	7326.9	3716.8	13152.6	Aluminium foil, "whether or not printed or backed with paper, paperboard, plastics or similar backing materials", of a thickness "excl. any backing" of <= 0,2 mm (excl. stamping foils of heading 3212, christmas tree decorating material)	

For those who plans to export to EU countries, the web portal **Access2Markets** is developed to support businesses willing to export or to import to obtain all necessary information. It combines

the market access database, the EU trade helpdesk and further information in a single tool. It provides information about duties, taxes, and product requirements of EU countries and over 120 other markets around the world. All necessary information is possible to obtain product by product. By providing the name of product, the name of exporting country and the name of the country to be imported in the section of 'My Trade Assistant' (*the example see bellow*) by product code the customs duties and national or local taxes, procedures and formalities, product rules and requirements, requirements of rules of origin, tarrifes, trade barriers, trade flow statistics for planning the business and much more can be checked. For more information see *https://trade.ec.europa.eu/access-to-markets/en/non-eu-markets/AM.*



Transportation of especially fresh agri products to EU market is still riski taking into considatation their parashable character and the time it takes to reach to the final destination. In addition, transportation of fresh agri products demand temperature controlled containers and assume additional costs for the exporters. Different agri products require different temperature. For example:

Apricots require up to +1 to 0 °C, and can be kept two weeks.

Peaches require up to +1 to 0 °C, and can be kept 15-20 days.

*Blueberries and raspb*erries require up to 5°C. They can be kept only for 20-21 days.

Fig require +1 to +2 °C. They can be kept only for 7-14 days.

Percimon require up to 12-0 °C. They can be kept only for 3-4 months.

Walnuts require up to 25°C but not higher than 30°C. They can be kept for up to 3 months.

The exporters should pay attention to ***the right packaging*** during transportation. For example, for raspberries it is adviced to use the technic of one layer to increase the shelf life.

The other important factor that the Armenian exporters should consider is ***the volume and weight of the shipment container.***

It is adviced to use following transportation ways for named product groups:

- Fresh Flowers – air cargo
- Fruits and vegetables – air cargo, road or ferry depending of the type
- Berries – Air cargo

Nuts, processed fruits and vegetables – road, ferry transportation

(**Source:** *IFC/World Bank Group in partnership with the UK Government's Good Governence Fund, Report prapered by ICARE), <Precervation of fruits and vegetables> Shen NGO publications*

5. RESULTS OF STUDY

5.1 RESULTS OF TAVUSH MARZ

5.1.1 RESULTS OF FOCUS GROUP DISCUSSIONS IN TAVUSH MARZ

Based on the statements of the local administrative unit (Marzpetaran) representatives Tavush marz has a great development potential. The most popular agricultural fields of production in the region are fruit growing, viticulture and livestock breeding, which accounts for 75% of total production.

The climatic conditions of the region allow a range of subtropical crops cultivation, particularely blood orange, persimmon, olives, pomegranate, and figs. The expansion of walnut plots is promising. The collection of wild berries, wild fruits, rosehips, and greens is widespread in the region.

Beekeeping has progressed the last decate. However, in the last 3 years there has been a great decline of beehavies. Unable to find a solution to the deases, the volume of honey production has declined. In spite of it, this branch of production is considered promising for the region.

The producers of the marz make intensive use of offered several agricultural development governmental support programs. The Governmental Agro-support programs implemented in 2021 in Tavush marz are (Source: Report of the Government of Armenia, 2022)

- 1570 credit units – AMD 3.2 billion
- 4 ha intensive orchards
- 2 smart cattle-breeding farms
- 44 agricultural machineries
- agri-food leasing for AMD 425 million

- 467 procurement contracts
- 64 agriculture insurance contracts

The food processing industry is developed in Tavush marz. There are at least three big wine and canned food processing factories, namely the Ijevan factory, Berdavan wineries, and the Tavush branch of the Yerevan Brandy Factory. Aigedsor Ecogarden is specialized in fruit vodka production.

Contracting relationships are established between producers and processors, mostly signed for 1 to 5 years. While the producers do not face difficulties in selling their produce (particularly grapes) to processing factories the price they receive is not always satisfactory. No established price policy is in place; all grape varieties are accepted under the same price.

The Green Village LLC is the only processing factory that buys most of the raw produce from local producers and has a price differentiation policy based on the quality and variety of agri raw produce. In addition to price policy, Green Village LLC follows and supports the process of production, paying consistent visits to farm producers.

The marzpetaran representatives stated that the administration has rather a mediator and adviser function than a controller function. It acts as a mediator between government, producers, processors and other actors in the marz. Because of the lack of enforcement mechanisms and controlling function, the efficiency of the efforts is in some cases low as farm producers decide themselves to follow the advice of marzpetaran or not (e.g. the amount of fertilizer use).

The main problems that marz faces are:

- Based on the statements of farm producers, grapes orchards' profitability is lower than expected. The main reason mentioned is that grape vines have been planted more than 60 years ago and it is time to be stepwise rejuvenated.
- Other challenges exist as well. It is especially due to small land plots, low soil quality due to the lack of knowledge and improper fertilization practices.
- Processors in their turn are not always satisfied with the quality and consistency of raw agri produce.
- Agro insurance is still not widely used. The insurance type mainly used is insurance against hail. The existence of a lower number of insurance contracts was explained by the decreased hail frequency in recent years. Marzpetaran estimated the total area under insurance about 40 ha.
- Cooperatives operate mainly under the management of one person, or for 2-3 farms. The resource is not used properly, the existence of such cooperatives discredits the idea of cooperation and farmers avoid membership.

However, the first good example of successful land consolidation initiatives undertaken by the members of the "Verin Tsaghkashen" cooperative exists, they managed to organize land consolidation of 48 individual landholders' plots for potato production. Several good examples of cooperatives that obtained modern machinery for joint use and service provision exist as well.

5.1.2 SWOT ANALYSIS IN TAVUSH MARZ

TABLE 3 SWOT ANALYSIS IN TAVUSH MARZ (PRIMARY DATA)

Strengths
• Long lasting culture of grape production • Unique valuable grape varieties and sorts • Existence of large forest area - wild collection experience and possibilities • Established culture of wide variety of fruits production • Unique taste of fruit and different berry sorts • Climatic conditions allow cultivation of unique subtropical crops: persimmon, olives, pomegranate, and figs • Existence of big processing factories • Established relationships with processors based on contracting arrangements for grape procure • Existence of production and agricultural cooperatives • Existence of several big greenhouses, which are a good example of successful production for beginners • Existence of fruit solar driers
Weaknesses
• Low soil quality (lack of nutrients) • Improper application of fertilizer • Lack of knowledge and soil analysis laboratories (the only one was just established in Noyemberyan) • Lack of specialists interpret and to give advice based on lab results • No proper knowledge of producers on agronomy and animal husbandry • Lack of agricultural consultants, animal breeding specialists • Lack of specialists in the field of agricultural product processing specialist in: winemaking, fruit vodka, milk technologists and canning technologists • High loses because of the limited of irrigation water • In pea production, filtration and packaging problems because of the lack of facilities • Refrigeration systems deficiency, lack of deepfreezing facilities • Bad roads • Lack of modern technology and methods • Low quality of milk • Already old grape vines • Quality certification, ISO standards need

- Not consistent quality of products, loss for processor
- Limited knowledge of possible export markets
- Not heated greenhouses
- Electrical fruit driers in addition to solar driers needed
- Storage, marketing, processing challenges

Opportunities

- Potential to increase export of processed food and wine
- Great potential for the production of figs for fresh consumption
- Expansion of subtropical plants plantations has perspective in the marz
- Export potential of fresh fruits
- Potential for legumes volume growt
- Beekeeping and all beekeeping products are promising industries for the region's farmers, especially women and young people

Threats

- Environmental changes
- Bordering marz to Azerbaijan, risk of shooting and instability
- The main market for fresh fruit exports is Russia, fluctuations in the ruble have a big impact on exports
- Political tentions, and possible changes

5.1.3 Food Losses and its Reasons in Leading Agricultural Value Chains

In the beneficiary regions, the meetings were held with the target groups: marzpetaran, farmers/producers, small milk and fruit and vegetable processors, cooperatives, intermediary sellers, and agricultural inputs sellers.

During the focus group discussions, the main emphasis was put in identifying the reasons of food losses in the main value chains in different stages of production.

Types of crop loss in production stage

Aged vineyards: 50% of the vineyards in the region are old orchards that need replanting and renewal. Such orchards have already lost their productive yields. Today, the average yield of vineyards is 10-13 t/ha, which has decreased by 25-30% of full potential. At the same cost of cultivation and care, today farmers get less yield than possible.

Vineyards with mixed varieties: Vineyards are small, fragmented, have no homogeneous variety, most of them have at least 2-3 varieties. In the case of such plantations, the risk of spreading the infection is high due to the different maturity of the varieties, their different degrees of resistance to diseases and pests. Grape grower farmers are forced to carry out more treatments. In the case of such cultivation, the cost is at least 10% more, which can be considered a type of loss.

Lack of machinery for intensive, densely planted orchards: The fragmentation of the land and the location of the plots challenge the establishment of intensive orchards. The farmers face a problem as the marz lacks appropriate equipment to care for densely planted lands. Private farms owning small tractors without a trunk do not provide service. As a result, most of the work is performed manually or with homemade devices. Such cultivation increases the cost by at least 20%, at the same time increasing the required time and decreasing the efficiency and quality the work.

Lack of specialized equipment for cultivating vineyards and negative environmental impact: The vineyards are fragmented and planted in an irregular pattern. 70% of the vineyards are cared for by hand, as there is no appropriate equipment or service in the region. Particularly problematic are dealing with the weeds and require a large number of treatments. Unable to implement the proper farming techniques, large quantities of herbicides are used in orchards. Manual care costs are at least 10% more.

Loss due to lack of irrigation water and irregular water management: Limited amount of irrigation water results to crop yield loss:

- 20% for potatoes, vegetables
- 15% for orchards
- at least 20% for the vineyards, as most of the vineyards in the region are waterless.

In the areas where the vineyards are irrigated, the irrigation frequency depends on farmers, without considering the accepted irrigation norms. There is no practice of using moisture meters. The ubnormal irrigation practicies results to the indirect spread of diseases. Irregular irrigation/over irrigation of orchards and vineyards results to the loss of water around 15%.

Poor quality of milk, milking:

- Poor quality milk, high-acidity raw material, which is sold at a low price
- Insufficient milking, cooling, transportation equipment
- Lack of knowledge
- Due to the low price of milk, low motivation to further improve production process

Medium and low-quality crop loss: Due to lack of knowledge, inappropriate agricultural machinery, improper choice of varieties, small size, and diverse composition of the orchards, result to a low-quality yield. 80% of the harvest from the home state orchards is not sold, it is used for own consumption or is used as fodder.

Based on conducted individual survey results 78% of producers use overaged agricultural technology in field crop production and 22% in horticulture, only 22% in horticulture and 12% in field crop production use modern technologies. 56% of respondents combine some type of modern technics and technologies in horticulture, and 10% in field crop production.

TABLE 4 USE OF MODERN AND TRADITIONAL TECHNOLOGIES (%) IN TAVUSH MARZ

	Traditional Technologies	Modern technologies	Combine Both
Horticulture	22%	22%	56%
Field Crops	78%	12%	10%

Source: Shen NGO survey, 2022

Types of crop loss in Agro-inputs stage

Fertilizers and Pesticides:

- Due to the limited variety of pesticides availability, the same type of pesticides is used over the time. As a result, the number of treatments is not controlled and has increased. This is a serious problem from an ecological management and protection point of view.
- Fertilization is carried out mainly with nitrogen fertilizer provided with state support
- Regional shops selling agro-inputs are not interested in changing the assortment, they make more profit from selling low-quality pesticides
- The quality, type and shelf life of pesticides sold in small doses are not controlled.

Lack of machinery spare parts for renovations and service units: Most spare parts are ordered from abroad. There are many consolidated communities that do not have shops selling spare parts for agricultural machinery and are forced to buy it in Yerevan. As a result, agricultural work is delayed.

Poor quality and lack of beekeeping drugs, necessary substances:

- Due to the poor quality of medicines used in beekeeping, improper storage of medicines, and sale of expired date of use drugs in the marz, at least 10-15% decrease in the number of colonies per household each year.
- There is a large shortage of beekeepers. A large number of beekeepers in the region need advice that will help improve the quality of their production.

Types of crop loss in harvest and postharvest handling stage

Complicated grape harvest: The fragmentation of the vineyards and the lack of workforce have complicated the grape harvest in recent years. The cost of the harvest alone is 10% of the total production cost. No appropriate equipment and machinery (grape harvest combine) are in place for the automation of the harvest.

Long-term fruit storage refrigerators:

- Lack of refrigeration service providers
- Pineapple plantations are increasing. However, most farmers are unable to maintain their harvest. They are force to sale to resellers, who keep and supply to big refrigerator holders and supermarkets. As a result of such transaction, the producers lose at least 15% of the product value of the net income.

Lack of fruit storage, raw materials collection refrigeration units, and trucks: There is a great need for small refrigerators, refrigeration machines for transportation of fruits. In the absence of such possibilities the losses occur during the transportation from the processor to the procurer and during the collection and storage of raw materials. These losses can reach up to 20%. In the case of figs and cornel the loss is up to 30%.

The loss is increasing as well during the harvest. It is because of the lack of proper knowledge about right harvest time identification. Based on conducted individual farmers survey results 67% makes the harvesting decision by his own prediction, 10% based on accepted traditional ways, 3% uses other ways, and only 10% consult the specialist about the decision of a right harvest time.

TABLE 5 HARVESTING DECISION IN TAVUSH MARZ

Harvesting Decision Making is Based on				
	Ripeness on own opinion	Traditional Way Used by the Elderly	Ask Advice of the Specialist	Other
Percentage	67%	10%	10%	3%

Source: Shen NGO survey, 2022

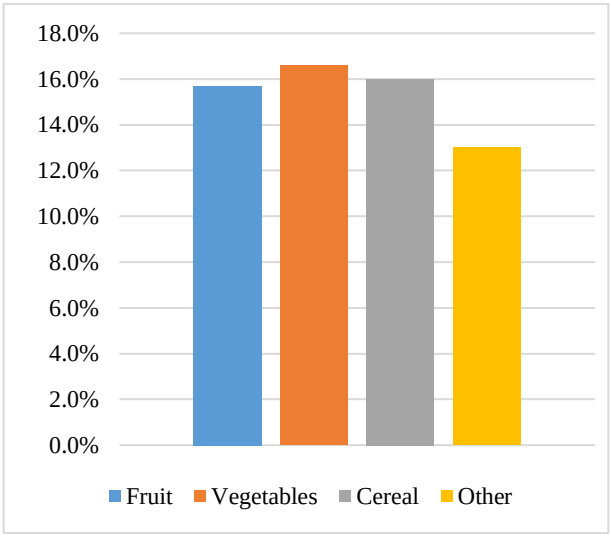
Post-harvest Handling: As **Table 6**. shows that there is a lack of knowledge in respect to post harvest handling. 71% of respondents do not do pre cooling, 22% do not do cleaning before storing. 22% of existing storages are not equipped with appropriate facilities.

TABLE 6 POST-HARVEST HANDLING (%) IN TAVUSH MARZ

Conducting Post Harvest Handling								
Pre Cooling		Cleaning		Sorting		Appropriate Storage	
Yes	No	Yes	No	Yes	No	Yes	No
29%	71%	78%	22%	98%	2%	78%	22%

Source: Shen NGO survey, 2022

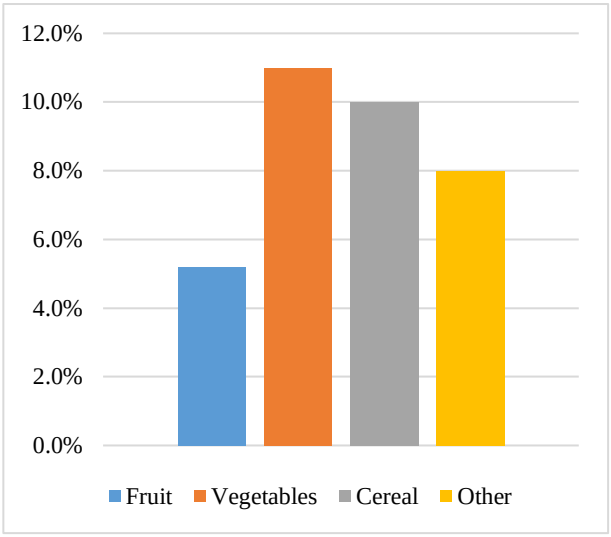
FIGURE 2 PRODUCT AVERAGE LOSSES DURING HARVEST IN TAVUSH



Source: Shen NGO survey, 2022

The average loss during harvest (**see Figure 2**) is as follows: in case of fruits -15.7%; in case of vegetables - 16.6%; in case of cereal - 16.0%; other products - 13.0%.

FIGURE 3 PRODUCT AVERAGE LOSSES DURING TRANSPORTATION IN TAVUSH MARZ



Source: Shen NGO survey, 2022

The average loss during transportation (**see Figure 3**) is: in case of fruits - 5.2%; in case of vegetables - 11.0%; in case of cereals - 10.0%; other products - 8.0%

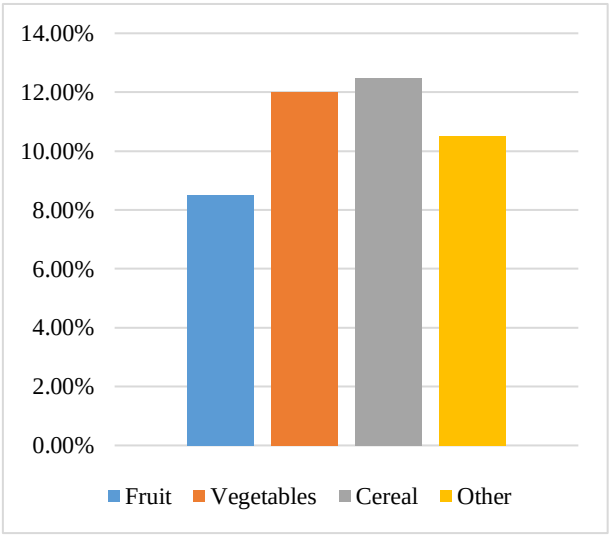
The main reasons for the lose during transportation are recorded in

TABLE 7 REASONS OF FOOD LOSE DURING TRANSPORTATION (%) IN TAVUSH MARZ

Reasons			
Not Appropriate Transportation	Bad Roads	Distance to Market	Other
33%	20%	44%	3%

Source: Shen NGO survey, 2022

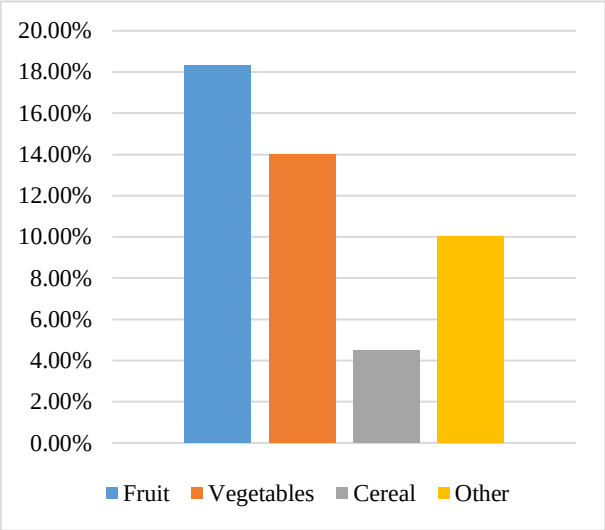
FIGURE 4 PRODUCT AVERAGE LOSSES DURING SORTING IN TAVUSH MARZ



Source: Shen NGO survey, 2022

The average loss during sorting (**see Figure 4**.) is: in case of fruits - 8.5%; in case of vegetables - 9.3%; in case of cereal - 11.0%; other products - 10.3%.

FIGURE 5 PRODUCT AVERAGE LOSSES DURING STORAGE IN TAVUSH MARZ



Source: Shen NGO survey, 2022

The average loss during storage (**see Figure 5.**) is: in case of fruits - 18.3%; in case of vegetables - 14.1%; in case of cereal - 4.9%; other products - 10.1%.

Based on conducted individual survey results the the importance of agricultural insurance is aknolaged. 44% of respondants had early spring frostbite insurance package, and 46% of respondents had hail insurance package. However, there is a need for further awareness raising and introducing drought insurance packages.

TABLE 8 IMPORTANCE OF AGRICULTURAL INSURANCE IN TAVUSH MARZ

Three main weather related damages		
Early Spring Frostbite	Hail	Drought
44%	46%	- %

Source: Shen NGO survey, 2022

Types of crop loss in processing stage

Based on group discussions and individual producers interviews the main loses are recorded because of following reasons:

Raw material quality and varietal composition:

- The diversity of varieties produced on small farms. This creates problem for processors. In order to obtain a large amount of raw material of the same variety the processors are forced to buy bigger quantities of raw materials and then to sort it. In this case, there is a loss of at least 10% which is a high percentage of lose for processing.
- Procurement is carried out on unsorted fruits. Farmers do not sort the raw materials before selling to processors. If sorted, the processor is ready to pay a higher price. In order to obtain a required quality raw material, the processors are forced to buy it from resellers. The resellers are paid at least 15% more, which is also considered a loss.

Processing of raw materials obtained from wild gathering: The raw materials from the wild collection are obtained from a single procurer, collecting the raw materials for several days from several forests. The product is stored without proper cooling conditions, losing its freshness. The

damage is especially significant in the case of raspberries, cornel, greens, and figs. The loss in the case of greens can reach up to 20%, and in the case of berries and fruits up to 15%.

Types of crop loss in export stage

Peach export-related problems: There are more than 400 hectares of peach orchards in the marz. This fruit is exported by only one exporter. The owners of the orchards suffer from the following problems

- Low purchase price
- Late procurement starts resulting to fruit overriping
- Very strict sorting and buying only best quality fruits, the rest of the fruits is sold with great difficulty in the local market
- Procurement volumes are reduced every year

A small number of exporters from the region: There are very few exporters in the region or they specialize in the export of figs only. There is a need to support small local exporters who can procure and export in small quantities. No such support for small start-ups is in place.

Lack of collection points: There are no procurement stations in the region, in the concolidated communities. Procurement requires great efforts and additional costs from small farms. Many procurers seek to work only with large producers and extensive orchards that can provide bigger quentities.

Difficulty cooperating with the chamber of commerce: The processors find it difficult to cooperate with the chamber of commerce and industry for selling and exporting their processed food as the latter sets and requires a high threshold of turnover, and supports only member processors.

Types of crop loss due to the lack of specialised workforce and agricultural consultants

Mechanizers: Most of the farmers who provide agri equipment services in the region are self-educated. There is a need for mechanization specialists to repair the equipment in addition to the service provision.

Agronomist, fruit grower, vinegrower:

- There is a lack of agricultural specialists in all villages of the region, vinegrowers, fruit growers, and plant protecttion.
- Lack of professional knowledge and absence of consultants results to the rejection of the introduction of new crops by the farmers.
- Cultivation costs double due to incorrect, incomplete consultancy Farmers get a low-quality crop.
- There is a particularly high demand for fruit growers.

Lack of specialized workforce: There are very few groups of skilled workers in the region. The work requiring professional skills is carried out in a non-professional manner, with extra resources, finances and time spent. There is a great demand for specialized groups of workers for sorting, pruning, etc.

Lack of veterinarians, stockbreeders:

- There is a need for poultry and rabbit breeding specialists
- There is a lack of confidence in the knowledge of veterinarians, especially in the professional knowledge of artificial insemination.

Lack of postharvest handling specialists: There is a lack of specialists in the operation of refrigeration facilities and storages. The lack of specialists leads to the sales of crops at a low price from the field.

Specialists in the field of processing:

- Technologist in the field of winemaking, fruit vodka making
- There is a demand for dairy production technologists
- There is a demand for canning technologists

5.2 RESULTS OF LORI MARZ

5.2.1 RESULTS OF FOCUS GROUP DISRUPTIONS IN TAVUSH MARZ

Based on the statements of the Marzpetaran representatives, Lori marz is unique and has a great potential for fodder production. Animal husbandry and the milk-processing industry are seen as other branches with the potential for development.

Lori marz is unique with its relatively humid climate. Lori and Tavush marzes are considered to be the wettest marzes in Armenia. Atmospheric precipitation is 600-700 mm annually. The climate in the foothills is subtropical. Moderately hot and dry summers and mild winters are typical. Such climatic conditions allow for the cultivation of subtropical crops in some settlements of the region: pineapple, fig, pomegranate, and olive.

The producers in the marz make intensive use of several agricultural development governmental support programs. The Governmental Agro-support programs implemented in 2021 in Lori marz are (Source: Report of the Government of Armenia, 2022)

- 1853 credit units – AMD 3.8 billion
- 3 ha intensive orchards
- 1 smart cattle-breedind farm
- 288 had large cattle animals
- 43 agricultural machineries
- agri-food leasing for AMD 73 million
- 46 procurement contracts
- 1482 agriculture insurance contracts

There is great potential and practice for the cultivation of cereals and legumes - beans, peas, green peas.

As the lands in the region are very fragmented, the aim here is to develop high-value agriculture - non-traditional vegetable cultivation, and non-traditional berry cultivation. Gathering wild greens, mushrooms, wild fruits, berries, rosehips, walnuts have great development potential in the region.

Wildlife gathering is carried out by groups of individuals. There are more than a dozen tea factories operating in the region, which produce fruit and herbal teas.

The beekeeping industry is well developed in the marz. According to the regional administration, there is no problem with consuming honey products in the region. There are 3-4 companies engaged in organic beekeeping and the production of organic tea in the region, which produce products in accordance with EU standards. The region used to have great potential for the Ayrum cannery, which procured from the Lori and Tavush regions. Currently, the processing plant is not operating, which has a negative impact, especially on the development of fruit growing.

The Vanadzor branch of the Armenian National Agrarian University has been open since 1 September 2005. 43 out of 72 specialists teaching at the branch have scientific degrees, are authors of books and scientific works. 7 doctors, 36 candidates of sciences are teaching here. Ongoing work is being done in direction of lecturers' training. The branch effectively collaborates with Department of Agriculture and Nature Protection of provincial administration of Lori and Marz communities, assists rural communities and farmers in the process of training specialists in various fields of agriculture. Today, many of the graduates of the branch work in different organizations in the communities of the northern region of the Republic of Armenia. The Vanadzor branch of ANAU also has an innovative Knowledge Hub, which is a motivating factor in the process of attracting students. About 290 students study in the part-time bachelor's program, and 15 students study in the vocational education program.

It has a great potential for development in the region in terms of ecotourism. The presence of health resorts has a great impact on the development of this tourism sector. In recent years, large flows of domestic tourism have been observed in Stepanavan and nearby villages. Along with the activity of tourists, it stimulates the development of lodges, small guest houses, small service units[14].

The main problems that the marz faces are:

- The marzpetaran representatives stated to have rather a mediator and adviser function than a controller function. In addition, the number of limited staff members and the closing of the ASMC were mentioned as challenges.
- Problems related to soil quality and nutrition control. The Rural Services Monitoring Department conducts soil analysis and mapping every 4-5 years. However, the results are not implemented and used by communities. The lack of proper knowledge of soil fertilization as well exists.
- The lack of a proper irrigation network.
- Outdated farm machinery and other technologies combined with the lack of agronomists were named as causes of farm low productivity and high loses during harvest.
- The main difficulties named in animal breeding is the lack of animal breeding specialists in the marz. The high cost of animal feed especially during the last two years and the low milk price are other named difficulties.
- There is a need for a coordinated milk collection point establishment, especially for the milk produced by the cooperatives.

[14] https://anau.am/en/education/educational-branches/vanadzor-branch/

- With respect to the use of agricultural insurance government support programs, there is a need for intensive awareness-raising activities.

5.2.2 SWOT ANALIYSIS IN LORI MARZ

TABLE 9 SWOT ANALYSIS IN LORI MARZ (PRIMARY DATA)

Strengths
• Import initiatives of high quality seeds • Existence of high productivity breeds of cattle • Existence of solar energy production facilities • Existence of large forest area - wild collection experience and possibilities • Established culture of variety of fruits production. The cultivation of different varieties of peaches is especially important. • Some settlements of the region allow to cultivate subtropical fruits: persimmon, fig, pomegranate • Unique taste of fruit and different berry sorts • The climatic conditions in some regions of the marz allow to be engaged in fodder production. • Payable service for soil analysis laboratory (in Vanadsor agricollege), which provides a cheap service • Nature allows to develop beekeeping and get quality honey. There is an association of beekeepers in the region, which has about 100 members • Existence of processing factories • Existence of production and agricultural cooperatives • Existence of greenhouses • Existence of fruit solar driers • Existence of cattle smart barns • Existence of dried fruit producers • Export experience of processed food to Russia and USA • Existence of Armenian diaspora, familiarity with Armenian food • The presence of cultural monuments ensures a certain flow of tourists in the region
Weaknesses
• Low soil quality (lack of nutrients) • Limited irrigation water possibilities • Lack of specialists to interpret and give advice based on lab results for soil analysis • No proper knowledge of animal husbandry, it is done on an amateur level, many farms are decades behind modern livestock production • Lack of animal breeding specialists • There is distrust towards some veterinarians, as a result of which the farmers try to solve the problems on their own and there is a loss of livestock. • Sharp decline of pasture and grassland soil quality, which is a result of incorrect cultivation of grasslands, irregular grazing of pastures • Lack of agricultural specialists, agronomists, plant protectors, fruit growers • Due to the limited variety of medicines available in the region, the same medicines are used all the time. As a result, the fight is not complete and the number of units of medicines applied per unit area has increased. This is a big problem from an ecological point of view

• Limited access to farms in remote pastures for collection milk • Low quality of milk, it is the result of lack of knowledge, equipment, mixing of milk of different quality • Due to the limited number of combine harvesters, the harvest is delayed and most of the overripe cereal is dumped during the harvest • Lack of contracting arrangements between supplier/farmers and procurers-processors, exporters • Certification and ISO standards implementation needs • Not consistent quality of products, loss for processor • Limited knowledge of possible export markets
Opportunities
• Potential to increase export of processed food • Potential for milk processing industry development • Implementation of cooling facilities for milk will save quite a lot of milk quantity for processing • Potential of huge forage/feeding production • Export potential • Great potential for agro-tourism, ecotourism development • Opportunity to expand the production of wild fruits and teas
Treats
• Environmental changes` especially drought and hail • Not being protected from natural disasters, especially for wild harvested products • Political tensions and possible changes

5.2.3 Food Losses and its Reasons in Leading Agricultural Value Chains

In the beneficiary regions, the meetings were held with the target groups: marzpetaran, farmers/producers, small milk and fruit and vegetable processors, cooperatives, intermediary sellers, agro-input sellers. During the focus group discussions, the main emphasis was placed on discussing the reasons for "bringing out the food losses in the main value chains of rural food production in the region". The loss of food at different levels of the value chain demonstrated below.

Types of crop loss in production stage

Cereal loss due to poor quality seed application is up to 10%, the reasons are:

- Pre-sowing purification of seeds is not carried out due to the lack of cereal seed purification equipment. The consolidated communities, uniting more than 10 villages, have no single seed purification device. As a result, more than 80% of cereal fields are contaminated with weeds.
  - The weeds hamper the growth of some cereal plans, leading to the decrease of yields by 10% and more.

Loss of potato crop due to poor quality planting material

- There is no potato production in the marz, the potatoe are imported from Shirak region. No quality control and guarantees of compliance with the variety of planting materials

are in place. Often the real yield does not match the description of the yield of the seller. Loss of at least 10-15% of the crop due to poor quality seeds.

- Many potato-growing farms use planting materials of 3, 4, or even 5 reproductions. The latter can not ensure quality and high yield. The poor-quality rootstock can result in a minimum of 25% of yield loss.

Loss due to worn-out, non-modern agricultural machinery:

- There are very few cereal seeders in the marz, and only a few potato seeders, resulting to the deviation of the sowing period and quality which creates up to 20% of the loss.
- Combines are few, old, and worn out. Following the harvest, the cereal fields sprout looks like sown again. Yield loss amounts to more than 10%.
- Loss of grass is due to lack of specialized equipment, and mowers. The grass is harvested in an overripe state, with almost no calories and crumbling during pruning. Loss makes more than 30%.
- There is no machinery in the region to function in intensive dense plantations and berry fields. The majority of the work is performed manually or is not performed at all, resulting to the spread of diseases. Yield loss is more than 15%.

Loss due to improper agricultural machinery application: Crop rotation is not applied, resulting to the decrease of the cereal and potato fields yields by up to 15%.

Loss due to lack of irrigation and irregular water management:

- Lack of irrigation water results in 10-15% loss of cereal crops, legumes
- Irrigation of vegetables, orchards and vineyards is carried out without accepted irrigation norms, at the disicion of the farmer. There is no practice of using moisture meters. Irregular irrigation results to the indirect spread of diseases. Irregular irrigation results as well to 20-25% water loss in orchards and up to 15% loss in potato fields.

Loss of grass due to misuse of pastures: Pasture degradation is especially evident in pastures located near villages. 30% of such pastures are degraded, devoided of vegetation. Irregular intensive grazing and the improper grazing timing leads to 30-40% loss of potential pasture productivity, damaging and preventing grass growth.

Loss of grass due to misuse of grasslands

- Following the privatization, the hayfields have been exploited for many years without restoration or improvement measures in place. Today, more than half of the grasslands have lost more than 60% of their productivity (Tashir region). In the past, 1 hectare used to produce at least 200 bales of grass, but now it produces only 60 bales.
- At least 30% loss in the grass/feeding calories. Previously, the grass was variety and had high nutritional values, but now the bales are made of only one-year-of old grass. With the same amount of fodder, the results for 1 hectare are 30% less.

Low milk and meat production: The presence of crossbreed cattle of local variety is a big problem in the region. There are villages, even consolidated communities, where no renewal of the breed composition of the cattle has taken place in the last 10 years. The cost of care and feed for such livestock is the same, but the productivity is at least 30-40% less.

Low-quality milk, not proper milking:

- Part of the produced milk, around 15-30% is procured at a low price due to improper milking, and the failure to keep mechanical or sanitation norms hinders negatively impacts the quality of milk.
- Due to the incorrect application and lack of tools needed for milking, the high-quality milk is mixed with the poor quality milk, resulting in a decrease of milk quality. This is especially true when collecting milk located far from the collection sites.

Medium and low-quality crop loss:

- Due to lack of knowledge, inproper agricultural machinery, improper choice of varieties, small size, and diverse composition of the orchards, the crop yields have low-quality. 80% of the harvest from the personal homstate orchards is not sold, it is used for own needs or is used as fodder.
- Cultivation of apple old varieties that are not in demand in the market, and need to be processed, however there is a lack of processing plants in the region. Thus, the crop suitable for processing is completely rejected.

Based on conducted individual survey results 64% of producers use overaged agricultural technology in horticulturae and 36% in field crop production, only 12% in field crop production and 8% in f horticulture use modern technologies. 52% of respondents combine some type of modern technics and technologies in field crop production, and 28% in horticulture.

TABLE 10 USE OF MODERN AND TRADITIONAL TECHNOLOGIES (%) IN LORI MARZ

	Traditional Technologies	Modern technologies	Combine Both
Horticulture	64%	8%	28%
Field Crops	36%	12%	52%

Source: Shen NGO survey, 2022

Types of crop loss in Agro-inputs stage

Lack of spare parts:

- Many agricultural works are delayed due to the wear and tear of agricultural machinery, lack of spare parts and time spent on repairing.
- It is difficult to buy spare parts for worn-out equipment, most of which are not produced and are often replaced with used ones. The given issues hinder the timely and quality implementation of the works.

Low-quality fertilizers and agrochemicals:

- The application of agrochemicals is not a common practice in the marz, the control means are used only after a problem arises. The main danger is the intensive use of insecticides, which negatively affect the number of beehaves.
- Due to lack of specialised advice, farmers buy medicines that are available in the region or use the advice of a seller of medicines.
- Only unilateral nitrogen fertilizer is used, most of which is obtained under state support programs. There is almost no use of complex fertilizers, as a result of which the quality and quantity of the crop are very low.

Poor quality and lack of beekeeping drugs, necessary substances: In Lori and Tavush marzes. Due to poor quality, damp, wood-soaked hives, beehaves suffer from rot, which is incurable for bees.

Bees feed with low-quality sugar, which sharply lowers their immunity, the bee ages twice as fast. Such a bee family does not manage to lay enough eggs and dies. Due to the wrong food base, there is a mass loss of bee colonies in all regions. Disappointed with the quality of the medicines, beekeepers began using antibiotics designed for humans in the early spring, which drop the bee's immunity and are accumulated in the honey. Regular use of antibiotics reduces the productivity of honey from one bee family by more than 10%.

Types of crop loss in harvest and postharvest handling stage

Significant cereal crop loss reasons during harvest:

- Depreciation of cereal harvesting machines/combine harvesters. The wear and tear of the equipment impede the quality of the harvest. There are so many accidents at work that the harvest is delayed. 20% more cereal is spilled during harvest.
- Due to the limited number of combine harvesters, the harvest is delayed and most of the overripe cereal is dumped during the harvest.
- Lack of harvesting machines for spelt, corn, lentils, beans, alfalfa seeds, and other widespread crops. Harvesting is done with cereal combines which spill 25% of the crop. As a result, they refuse further cultivation

Milk storage: 80-100% of the whole milk batch is not sold due to a lack of milk collection units in distant pastures, lack of refrigerators necessary for milk collection or storage, or refrigeration trucks. This milk is often used to make medium or low-quality cheese, which is later sold at almost self-cost. As production requirements are not met, such products are sold only in local markets or exchanged for natural products. This issue is urgent for all regions.

Lack of fruit and berry storage refrigerators: The gradual harvesting of fruits and berries complicates fruit preservation issues. The daily batch can not be taken to the processor, and in the absence of the necessary storage conditions, it becomes acidified. There are no small refrigerated storage units for fruit in the region, where it will be possible to collect and store the crop safely. Due to this problem, 20% and more of the harvested berries, rosehips, white cherries, figs are damaged.

Wild harvest crop loss during the transportation: For processors, wild pickers have a loss during the transportation of the harvest, especially polygonatum, hornbeam, chervil, asparagus greens. When being transported without refrigeration, these products lose weight and appearance by up to 30%. This indicator was given by a processor who is interested in purchasing better-quality raw materials. According to the processor, during the processing of half-faded greens, spoilage occurs in the production process. There is a need for a service of small refrigeration trucks. Based on conducted individual farmers survey results 56% makes the harvesting decision by his own prediction, 26% based on accepted traditional ways, 4% uses other ways, and only 16% consult the specialist about the decision of a right harvest time.

TABLE 11 HARVESTING DECISION IN LORI MARZ

	Harvesting Decision Making is Based on			
	Ripeness on own opinion	Traditional Way Used by the Elderly	Ask Advice of the Specialist	Other

Percentage	56%	26%	16%	4%

Source: Shen NGO survey, 2022

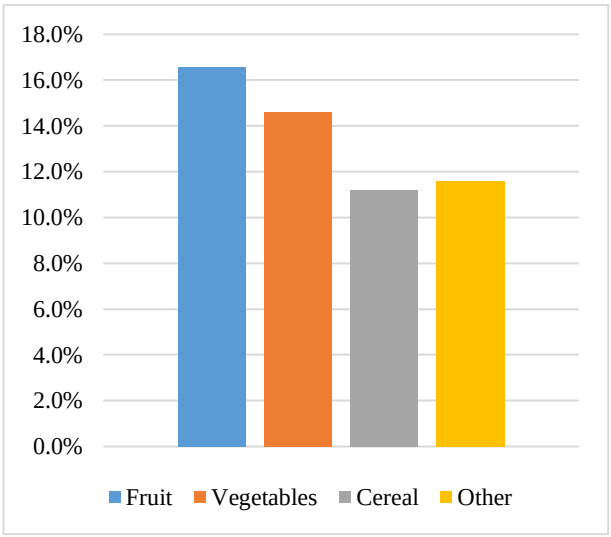
Post-harvest Handling: As **Tabele 12.**shows that there is a lack of knowledge in respect to post harvest handling. 46% of respondents do not do pre cooling, 14% do not do cleaning before storing. 68% of existing storages are not equipped with appropriate facilities.

TABLE 12 POST-HARVEST HANDLING (%) IN LORI MARZ

Conducting Post Harvest Handling							
Pre Cooling		Cleaning		Sorting		Appropriate Storage	
Yes	No	Yes	No	Yes	No	Yes	No
54%	46%	86%	14%	96%	4%	32%	68%

Source: Shen NGO survey, 2022

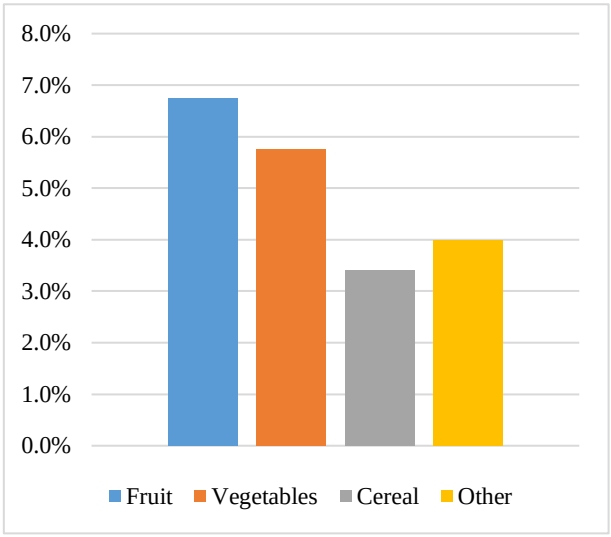
FIGURE 6 PRODUCT AVERAGE LOSSES DURING HARVEST IN LORI MARZ



Source: Shen NGO survey, 2022

The average loss during harvest (**see Figure 6.**) is as follows: in case of fruits - 16.6%; in case of vegetables - 14.6%; in case of cereal - 11.2%; other products - 11.6%.

FIGURE 7 PRODUCT AVERAGE LOSSES DURING TRANSPORTATION IN LORI MARZ



Source: Shen NGO survey, 2022

The average loss during transportation (**see Figure 7.**) is: in case of fruits - 6.8%; in case of vegetables - 5.8%; in case of cereal - 3.4%; other products - 4.0%.

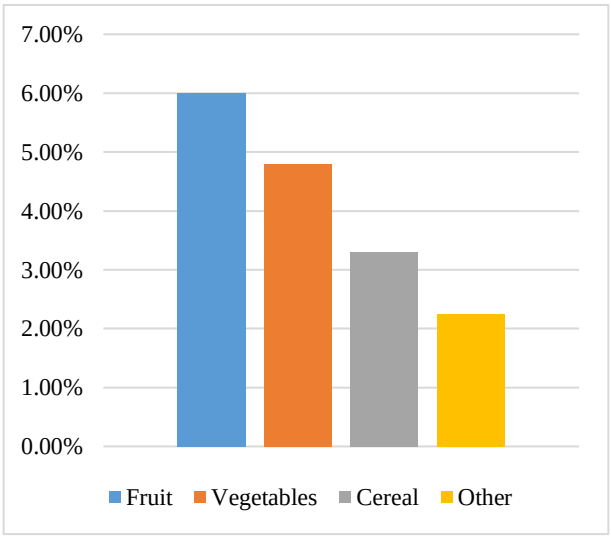
The main reasons for the lose during transportation are recorded in **Table 13.**

TABLE 13 REASONS OF FOOD LOSE DURING TRANSPORTATION (%) IN LORI MARZ

Reasons			
Not Appropriate Transportation	Bad Roads	Distance to Market	Other
46%	31%	19%	4%

Source: Shen NGO survey, 2022

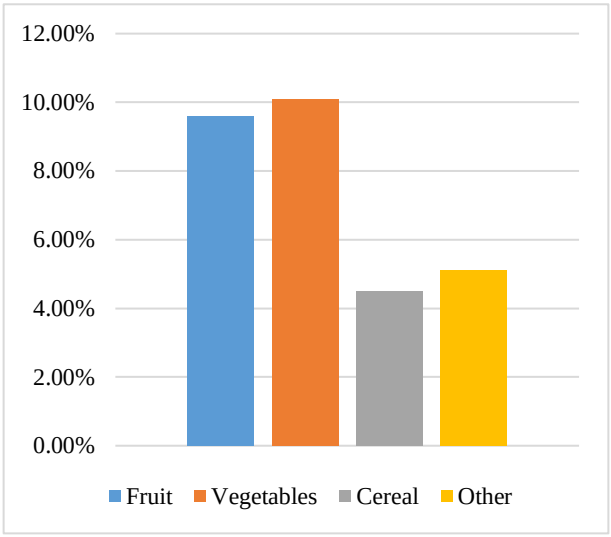
FIGURE 8 PRODUCT AVERAGE LOSSES DURING SORTING IN LORI MARZ



Source: Shen NGO survey, 2022

The average loss during sorting (**see Figure 8.**) is: in case of fruits - 6.0%; in case of vegetables - 4.8%; in case of cereal - 3.3%; other products - 2.3%.

FIGURE 9 PRODUCT AVERAGE LOSSES DURING STORAGE IN LORI MARZ



Source: Shen NGO survey, 2022

The average loss during storage (**see Figure 9.**) is: in case of fruits - 9.6%; in case of vegetables - 10.1%; in case of cereal - 4.5%; other products - 5.1%.

Based on conducted individual survey results the the importance of agricultural insurance is aknolaged. 12% of respondants had early spring frostbite insurance package, 23% of respondents had hail insurance package and 15% of respondents had drought insurance packages.

TABLE 14 IMPORTANCE OF AGRICULTURAL INSURANCE IN LORI MARZ

Three main weather related damages		
Early Spring Frostbite	Hail	Drought
12%	23%	15%

Source: Shen NGO survey, 2022

Types of crop loss in processing stage

Lack of fruit storage refrigeration units for processing or long-term storage: Availability of modern refrigeration facilities providing storage service. Large, well-maintained private farms do not provide services for small farms.

Limited milk collection volumes due to the wear of the small to medium-sized production facilities equipment:

- Small/medium volume dairy procurement units/equipment operating in the region do not allow for more procurement. These manufacturers need to be refurnished.
- In villages with a small number of livestock or small livestock farms, procurement is delayed or non-existent, and milk is often spoiled. There is a need to set up small refrigerated milk storage units.

Types of crop loss in export stage

Export of subtropical fruits:

- In the past, Spayka Company exported large quantities of peaches. Later, the peach orchards grew old, which fell, and the exporters gradually left the region. There is a need to establish new orchards and choose the proper varieties.

- During the export of figs, problems of varietal composition and sorting arise. There is a need to create sorting and refrigeration units.

Fruit export: Historically, Armenia exported mainly apricot, apples, peaches, plums, grapes. In 2018 about 7.2 thousand tons of apricots (about USD 5mln), 5.4 thousand tons of peaches (about USD 3.3mln), 1.6 thousand tons of plums (about USD 0.8mln) were exported from Armenia. Russia is the main destination for Armenian fruit exports.
The export potential of Fruits VC is labeled high for Tavush marz with its exportable fruits' varieties and volume, while Shirak and Lori do not have "exportable" fruits (fruits are mainly grown in backyards in comparatively small volumes).
Berries export: Armenia provides a wide variety of herbs, both wild and cultivated, including "ecologically clean" herbs from the forests and mountains. Herbal teas represent a product group with gradual growth. Russia has been the key market for the exportation of herbs so far. According to expert opinions, there is a potential for exporting herbs from Armenia to the EU market, in case of satisfying regulation standards on quality and safety.
On the other side, export statistics of "Plants and parts used for primarily in perfumery, pharmacy or for insecticidal, fungicidal purposes" demonstrated fluctuating nature during 2014-2018. In 2018 exports from Armenia amounted to 642,000 USD (about 475 tons) the highest level since 2014. About 80% of these plants were exported to Iran, France, and the USA. It is noteworthy, that the export increase in monetary terms surpasses the volume in physical terms significantly. This indicates a move towards high-value products.

Types of crop loss in workforce and specialists' stage

Lack of agronomists, consultants:

- There is a shortage of agronomists in all villages of the region.
- Lack of professional knowledge and absence of consultants hamper the introduction of new crops by the farmers; they refuse to cultivate high-value crops without finding a solution to the problems encountered during cultivation.
- Cultivation costs double due to incorrect, incomplete consultation. They get a low-quality crop
- There is a particularly high demand for fruit growers
- There is a demand for dairy technologists in the region
- Canning plants need fruit and canning technologists

Lack of specialized workforce: There are very few groups of skilled workers in the region. Some groups work with exporters sorting the potatoes for export. The work requiring professional skills is carried out in a non-professional manner, requiring more resources, money, and time to be spent. There is a great demand for specialized groups of workers: sorting, pruning, etc.

Lack of veterinarians, stockbreeders:

- There is a need for poultry and rabbit breeding specialists
- There is a lack of confidence in the knowledge of veterinarians, especially in the professional knowledge of artificial insemination.

Lack of postharvest handling specialists: There is a great need for specialists in the operation of refrigeration facilities and storage in the marz. The lack of consultation and specialists lead to the

sales of crops at a low price from the field. The extra profit that can be obtained when having storage capacities is not received by the farmer today.

5.3 RESULTS OF SHIRAK MARZ

5.3.1 RESULTS OF FOCUS GROUP DISCUSSIONS

Based on the statements of the Local government office (Marzpetaran) representatives, the location, relief, and climatic conditions of the Shirak marz allow for the production of a wide range of agricultural products. The marz has the potential for intensive horticulture development and an increase in the number of greenhouses for vegetables, flowers, and forage production.

The producers in the marz make intensive use of several agricultural development governmental support programs. The Governmental Agro-Support Programs implemented in 2021 in Shirak marz are (Source: Report of the Government of Armenia, 2022):

- 2459 credit units – AMD 5.8 billion
- 1 smart cattle-breeding farm
- 14 had small cattle animals
- 58 agricultural machineries
- agri-food leasing for AMD 246 million
- 331 procurement contracts
- 981 agriculture insurance contracts

The unique scientific-research center, operating in Armenia, the Gyumri Breeding Sation, is located in Shirak marz. The resources, gene pool, and expertise of this scientific research and experimental unit make a strong foundation and a favorable environment for the development of the cereals, legumes, and seed industry. Shirak marz can become one of the centers of cereal production in Armenia. Currently, seed breeding farms operate in the region, and in case of relevant support they can be strengthened and the quality of seed breeding can be improved.

More than two dozen private businessmen, operating in the marz, are engaged in the import of Super Elite and Elite cereal seeds from Russia, Ukraine, and Belarus.

Shirak marz is one of the leading marz engaged in potato cultivation in Armenia. About a dozen specialized farms import super-elite, elite potato rootstock from the Netherlands, Germany, and Scotland. Some of them carry out secondary seed cultivation on their own or leased lands, receiving and selling F1, and F2. Shirak marz is considered to be the main supplier of potato rootstock for the Armavir, Gegharkunik, Aragatsotn, and Ararat regions.

Greenhouses have been established in Shirak with about 10 hectares of hydroponic systems equipped with modern equipment, specialized in strawberry and flower production. Most of the products are exported to Russia and the United Arab Emirates. With the co-financing of state support programs, about a dozen Smart Farms have been established in the marz, serving as demonstration farms to present the latest technologies in the livestock sector.

The marz has a perspective on cultural and touristic development, with agrotourism and cultural tourism actively evolving in recent years.

The main problems the marz faces are:

- The marz is very large and scattered, it has its specific problems requiring comprehensive solutions, but the latter are implemented point by point due to the lack of resources, thus they are not effective.
- In addition to the positive dynamics resulting from the consolidation of communities, there are problems with no toolkit to address. Large communities formed by the unification of more than a dozen villages face issues regarding the management and rational distribution of resources.
- The lack of irrigation water, and the need for the water reservoirs renovation.
- Low soil quality, unilateral soil fertilization mostly only with nitrogen. Need for a soil quality control system, soil laboratory testing, and follow-up process.
- Decreased land quality, and reckless exploitation of community-owned land resources, particularly pastures.
- Old/outdated agro machinery, combine harvesters, cereal sowers.
- Environmental changes that cause droughts. Drought insurance should be introduced shortly.
- Great need for agricultural consulting, and agricultural specialists. The incomplete activities of the former ASMC (Agricultural Support Marz Center) have further frustrated farmers in receiving quality professional advice.
- Irrational use of cooperative resources. Wrongly established cooperatives, especially pasture users' cooperatives, most of which do not operate or are solely managed.
- Especially for fruits and vegetables postharvest, the lack of proper handling, appropriate storage, and cold storage facilities. Marketing and sale challenges and the missing link between producers and processors are other difficulties.

5.3.2 SWOT ANALYSIS IN SHIRAK MARZ

TABLE 15 SWOT ANALYSIS IN SHIRAK MARZ (PRIMARY DATA)

Strengths
• Potential of high yielding wheat seed production • Potential of to cultivate large volumes of root-crops and years of experience. • Import initiatives of high quality potato seeds • Potential of legume and wheat production • Potential of forage production • Existence of Gyumri Selection Centre as a selection and seed breeding station. • Existence of production and agricultural cooperatives • Over time, a crop of berries and some fruits has developed, export to Russia • Export experience of potato to Georgia
Weaknesses
• Low soil quality in arable lands, in pastures (lack of nutrients) • Limited irrigation water possibilities • Lack of specialists to interpret and give advice based on lab results for soil analysis. • Lack of agricultural specialist in the settlements and consolidated consultants, specialists • Lack of agricultural consulting services in plant production, veterinary, plant production

• Over-worn agricultural machinery, especially combine harvesters, cereal sowers. • Lack of knowledge about carrots, beet sorting, storage, lack of refrigeration facilities for storage of such crops • Limited number of modern technology and methods implemented in the marz. • Certification and ISO standards implementation need • Not consistent quality of products, loss for processor • Limited knowledge of possible export markets • Absence of potato processing enterprises
Opportunities
• Potential to increase sale in the local market for the processed potato` potato flour, chips, semi-finished product for fries • Proper use of the resource of Gyumri Selection Centre to increase the seed production of locally valuable varieties of wheat, barley, lentils, peas • Large areas of land resources, arable lands, which, if properly cultivated, can yield large volumes of products • Potential to increase export of processed food
Threats
• Environmental changes especially drought and hail for cereals • The uncontrollable state of pesticide residues in the case of potatoes • Political changes

5.3.3 Food Losses and its Reasons in Leading Agricultural Value Chains

In the beneficiary regions, the meetings were held with the target groups: marzpetaran, farmers/producers, small milk and fruit and vegetable processors, cooperatives, intermediary sellers, and agricultural inputs sellers. During the focus group discussions, the main emphasis was placed on discussing the reasons for "bringing out the food losses in the main value chains of rural food production in the region". The table highlights the reasons for the loss of food at different levels of the value chain.

Types of crop loss in production stage

Up to 10-14% cereal loss due to the use of poor-quality seeds:

- The application of unconditioned seeds (low germination, low pureness) resulted in the violation of the sowing norms, with at least 20% more seeds being used for 1 ha of sowing.
- Almost no or partial pre-sowing seed filtration and disinfection take place. As a result, part of the seeds is damaged by soil pests and the growth of the other part is hindered by the weeds. The weeds cause the fall of cereal yields by 5-7%.

Loss of potato yields due to poor quality rootstock:

- Many potato-growing farms use rootstock of 3, 4, or even 5 reproductions. The latter can not ensure quality and high yield. The poor-quality rootstock can result in a minimum of 20% yield loss.
- 30% of small and medium farms use mixed seeds, there are at least 3 varieties of potatoes on the same plantation, thus:
    - tubers of different maturity levels are harvested, resulting in losses during the storage;

    - outbreaks of diseases occur due to different varieties, frequent treatment is needed, due to which the cost price increases
- Pre-sowing disinfection of tubers is carried out only on large farms for seed sowing. Very often the sowing is done with infected tubers, and such plantings can not provide a full harvest.

Loss due to the application of worn-out, outdated agricultural machinery:

- A few potato seeders are available in the marz, the consolidated communities uniting 8-10 villages own 2 seeding machines. Sowing is performed by hand-made machinery or manually, resulting in a number of agro-technical violations: uneven germination of the field, irregular watering of the territory, loss of plants during the banking-up, damage of the crop stolons, creation of the diseases and outbreaks spread foci.
- The number of cereal sowers is low, 30% of spring and autumn sowing is performed at the inappropriate time.
    - Spring sowing is delayed and the abrupt changes in weather hamper the timely germination of the plant and the formation of a full pruning node. And in the case of autumn sowings, warning against the sowing delay, they sow early, causing the damage to the sowings by the winter cold.
    - As a result of sowing low-quality cereal, most of the seed remains on the surface of the soil and is destroyed by birds. In the case of deep sowing, the process of uniform germination of the fields is disturbed, a part of the crop is damaged. All this is the result of the use of worn, old seeders.
- There is no machinery in the region for sowing corn, legumes, or perennial herbs. The above-mentioned plants are sown with worn-out cereal seeders, as a result of which they spend 20-25% more seeds, having low-quality sowing. Many have given up cultivating corn for this reason.
- Beetroot and carrot seeders are missing in the region, and a few units of existing equipment are at least 40 years old. When sowing these crops, there is at least 20% seed loss with higher sowing norms applied. And later at least 2 dilutions are carried out, additional costs are incurred.

Loss due to the improper agricultural machinery application:

- Crop rotation is not applied, as a result of which the yield is low in cereal and potato fields.
- No proper agricultural machinery is being exploited in cereal fields, weed control is organized only in seed-growing fields. 5-7% of the crop is lost due to weeds.
- The improper sowing dates of cereals account for the 10% loss of the crop due to unfavourable climatic conditions in winter and early spring.
- The yield of cereal crops and potatoes has decreased significantly not only in the years following the privatization but also in the last 5-6 years. The sharp decline in yield is conditioned by the decrease in soil quality and nutrients. The unilateral fertilization has resulted in the complete dehydration of the soil.

Loss due to lack of irrigation and irregular water management:

- Lack of irrigation water results in crop loss
    - 20-30% for potatoes and vegetables

- 10-15% cereals and legumes
- 20% beets, cabbage, and carrots

– Irrational distribution of water resources from Akhuryan and Artik water reservoirs between the marzes. Less water is allocated from the Akhuryan reservoir to Shirak marz, the main volume being allocated to the Armavir region.
– In communities with irrigated lands, only a few up-to-date irrigation systems are installed, and the loss from the main land brooks is 25% and more.

Loss of grass due to misuse of pastures: As a result of misuse of pastures, 30% of remote pastures, and in some villages up to 40% are not used in the marz. The grass of these pastures is not harvested, as there is a need for melioration works: stones removal, levelling, restoration of roads to take the appropriate equipment there.

Poor quality milk, milking:

– Part of the produced milk, around 15-30% is procured at a low price due to improper milking, and the failure to observe mechanical or sanitation norms hinders the quality of milk.
– Due to the incorrect application and lack of the tools needed for the milking, the high-quality milk is mixed with that of poor quality, resulting in a decrease in the received milk quality. This is especially true when collecting milk from farms far from the collection sites.

Medium and low-quality crop loss:

– Due to lack of knowledge, inappropriate agricultural machinery, improper choice of varieties, small size, and diverse composition of the orchards, they get a low-quality yield. 80% of the harvest from the personal plots is not sold, it is used for own needs or is rejected as fodder.
– Cultivation of apple varieties that are not in demand in the market, and need to be processed, but there is a lack of processing plants in the region. Thus, the crop suitable for processing is completely rejected.

Based on conducted individual survey results 51% of producers use overaged agricultural technology in horticulture and 38% in field crop production, only 34% in field crop production and 12% in horticulture use modern technologies. 37% of respondents combine some type of modern technics and technologies in horticulture, and 28% in field crop production.

TABLE 16 USE OF MODERN AND TRADITIONAL TECHNOLOGIES (%) IN SHIRAK MARZ

	Traditional Technologies	Modern technologies	Combine Both
Horticulture	51%	12%	37%
Field Crops	38%	34%	28%

Source: Shen NGO survey, 2022

Types of crop loss in Agro-inputs stage

Low-quality fertilizers:

- Only unilateral nitrogen fertilizers are applied, mainly obtained under state support programs. There is almost no application of complex fertilizers, as a result of which the quality and quantity of the crop are very low. Potato tuber storage capacity has declined sharply.
- Due to the lack of competition, prices often exceed the importer price by 10-15%. No quality control is in place.
- Due to lack of necessary knowledge and consultation, complex, extra-root, growth stimulants and other compounds are not used. They are not even represented in the regional market.

Lack of spare parts:

- Many agricultural activities are delayed due to the wear and tear of agricultural machinery, lack of spare parts, and time spent on repairs.
- The repair of agricultural machinery is carried out directly by the mechanizers, many of whom are self-educated and the repairs are not carried out completely, affecting the agricultural activities. There are communities where part of the autumn sowing is not done just because the seeder has not been repaired.
- It is a big problem to buy spare parts for worn-out equipment, most of which are not produced and are often replaced with used ones. Due to such malfunctions, the works are delayed, they are of poor quality.

Low-quality agrochemicals:

- There is distrust regarding the quality of pesticides sold in the region, very often 2-3 treatments are applied for the same pest because of the poor quality of medicines.
- Due to a lack of relevant knowledge and consultation, farmers buy medicines that are available in the region or use the advice of the seller, who in this case is interested in selling 3-4 types of medicines instead of 1-2.
- There is no control over the quality, origin, shelf life, and label compliance of the medicines sold in small doses.

Poor quality and lack of beekeeping drugs, necessary substances:

- Due to the poor quality of medicines used in beekeeping, improper storage of medicines, and sale of expired drugs in the marz, at least 10-15% decrease in the number of colonies per household each year. And in 2020-2021, there was a 50-70% decline in wintering grounds, in farms that used the same brand of medicine.
- No quality wax sheet is available in the local market, they have to use the existing low-quality one, which is not suitable for the bees, or it is very difficult to adapt, its cleaning requires extra effort, as a result, these colonies accumulate up to 10% less honey within one bee colony.
- Beginner beekeepers get frustrated with their work very quickly because they do not have enough knowledge to make their own frames, to have their own wax paper, and there is no supply of such quality products in the region. They have to buy used frames, thus losing up to 20% of bee colonies.

Types of crop loss in harvest and postharvest handling stage

Significant cereal crop loss during harvest:

- Depreciation of cereal harvesting machines/combine harvesters. The wear and tear of the equipment do not allow for a quality harvest. There are so many accidents at work that harvesting is delayed.
- 90% of cereal harvesters are at least 40 years old or older. There are units that shed more than 20% of the cereal during harvest.
- Due to the limited number of combine harvesters, the harvest is delayed and most of the overripe cereal is dumped during the harvest.
- Lack of harvesting machines for spelt, corn, lentils, beans, alfalfa seeds and other widespread crops. Harvesting is done with cereal harvesters which shed 25% of the crop. As a result, they refuse further cultivation.

Loss of cereal crops during the postharvest handling:

- Harvesting at an inappropriate time, overripe harvest. The harvest time is determined traditionally, when the neighbors harvest the crops, or when it is possible to find a combine.
- In the warehouse, the cereal loses weight and quality, as very often the harvest is carried out during the milk-wax ripening stage.
- Most cereal is sold directly from the field as the number of crop cleaning and storage service providers is limited or non-existent. As a result, the crop is sold at a lower price immediately after harvest.

Loss of potato yield during harvest: Potato loss occurs during the harvest for a number of reasons:

- A great loss of time and labor during manual harvesting.
- Autumn rains, late harvest, part of the harvest is brought to a warehouse already infected with rot, and overripe, with a minimum storage capacity of 20%, it must be sold urgently at a low price.
- During the manual harvesting, apart from a large amount of money spent, the harvesting is not fully carried out, some of the destroyed tubers remain under the ground and are not collected.
- Lack of knowledge and skills in the use of potato picking equipment damages 10% of the yield.
- The loss in medium-sized potato-growing farms with the lack of labor is due to harvesting period disruptions. As a result of early or late harvest. Potatoes harvested with such violations are not even stored, they are sold immediately from the field at a price at least 15% below the market price. Because they also know that they will have a bigger loss in case of storage.

Loss of potato yield during postharvest handling: During the storage of potatoes, crop loss is the most painful, it has increased over the years, being 20-25%. This problem is so sensitive that they refuse to stockpile en masse, selling directly from the field, losing at least 15% of revenue. The losses during the storage are caused by:

- Violation of harvest dates: overripe or immature tubers
- Lack of sorting equipment. Today the labor force has become more expensive. Sorting is an additional big expense, partial sorting is done only in the field

- Inadequate furnishing of necessary storage conditions, equipment wear, lack of modern equipment
- Diversity of varieties that interferes with storage.
- Crops of non-homogeneous varieties per unit area, maintenance of such a mixed crop is almost impossible.

Loss of carrots, beets, crops during storage: Carrot and table beet cultivation has declined sharply over the last 7-8 years due to large losses during crop storage, which small farms alone cannot cope with, requiring a comprehensive group approach. Loss of carrots, beets is caused by

- Improper variety composition, which is not well preserved
- Absence of harvesting machines in the marz
- Lack of specialized warehouses
- Lack of sorting and washing equipment

Carrots are harvested manually, and beet harvest is performed with the use of potato harvesters. During such a harvest, the percentage of obviously damaged roots exceeds 10%, and the number of fruits invisible to the eye but later diseased in storage exceeds 40%.

Loss of cabbage during storage: The loss during postharvest storage of cabbage amounts to 10-15%, due to

- Damage during the harvesting
- Lack of the necessary storage conditions
- Lack of harvesters
- Professional knowledge for the proper storage organization;

The loss is increasing as well during the harvest. It is because of the lack of proper knowledge about right harvest time identification. Based on conducted individual farmers survey results 72% makes the harvesting decision by his own prediction, 12% based on accepted traditional ways, 8% uses other ways, and only 8% consult the specialist about the decision of a right harvest time.

TABLE 17 HARVESTING DECISION IN SHIRAK MARZ

Harvesting Decision Making is Based on				
	Ripeness on own opinion	Traditional Way Used by the Elderly	Ask Advice of the Specialist	Other
Percentage	72%	12%	8%	8%

Source: Shen NGO survey, 2022

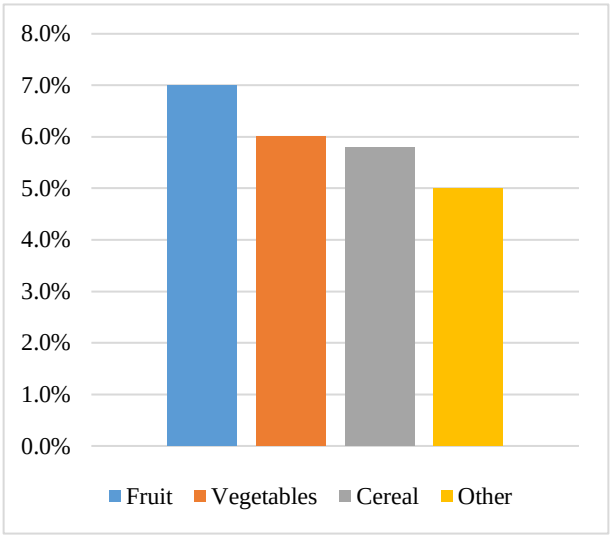
Post-harvest Handling: As Tabele 18. shows that there is a lack of knowledge in respect to post harvest handling. 41% of respondents do not do pre cooling, 13% do not do cleaning before storing. 76% of existing storages are not equipped with appropriate facilities.

TABLE 18 POST-HARVEST HANDLING (%) IN SHIRAK MARZ

Conducting Post Harvest Handling							
Pre Cooling		Cleaning		Sorting		Appropriate Storage	
Yes	No	Yes	No	Yes	No	Yes	No
59%	41%	87%	13%	96%	4%	24%	76%

Source: Shen NGO survey, 2022

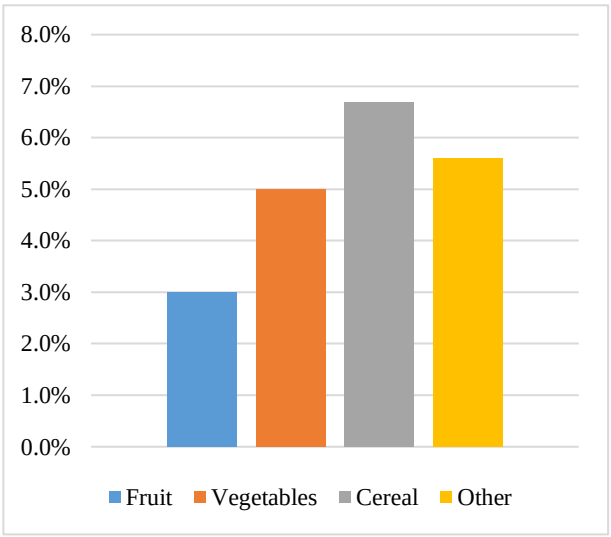
FIGURE 10 PRODUCT AVERAGE LOSSES DURING HARVEST IN SHIRAK MARZ



Source: Shen NGO survey, 2022

The average loss during harvest (**see Figure 10.**) is as follows: in case of fruits - 7%; in case of vegetables - 6%; in case of cereal - 5.8%; other products - 5.0%

FIGURE 11 PRODUCT AVERAGE LOSSES DURING TRANSPORTATION IN SHIRAK MARZ



Source: Shen NGO survey, 2022

The average loss during transportation (**see Figure 11.**) is: in case of fruits -3%; in case of vegetables - 5%; in case of cereals - 6.7%; other products - 5.6%

The main reasons for the lose during transportation are recorded in **Table 19.**

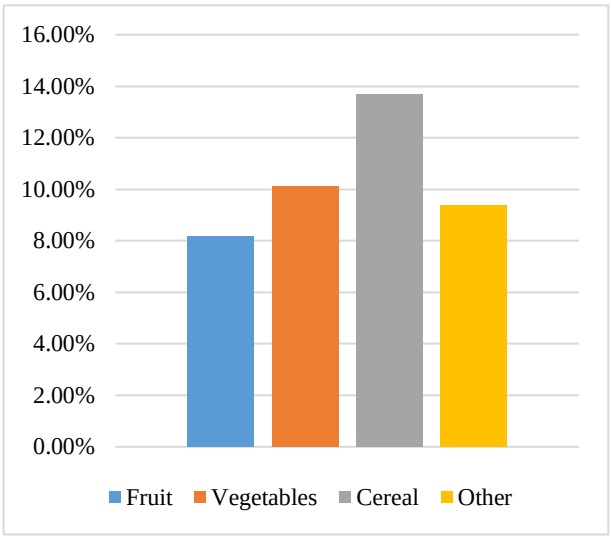
TABLE 19 REASONS OF FOOD LOSE DURING TRANSPORTATION (%) IN SHIRAK MARZ

Reasons

Not Appropriate Transportation	Bad Roads	Distance to Market	Other
36%	18%	46%	- %

Source: Shen NGO survey, 2022

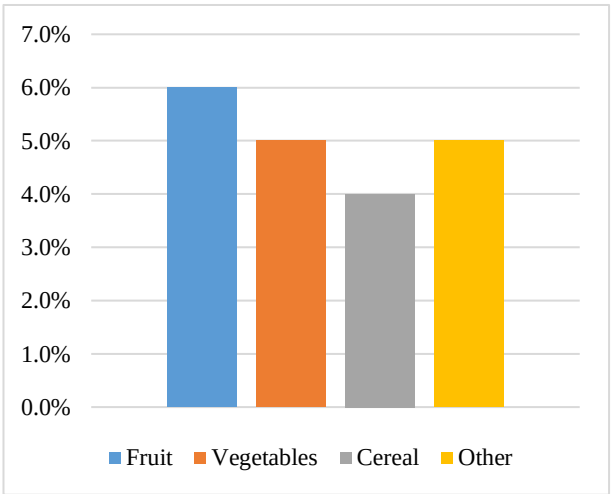
FIGURE 12 PRODUCT AVERAGE LOSSES DURING SORTING IN SHIRAK MARZ



Source: Shen NGO survey, 2022

The average loss during sorting (**see Figure 12.**) is: in case of fruits - 8.2%; in case of vegetables - 10.1%; in case of cereal - 13.7%; other products - 9.4%.

FIGURE 13 PRODUCT AVERAGE LOSSES DURING STORAGE IN SHIRAK MARZ



Source: Shen NGO survey, 2022

The average loss during storage (**see Figure 13.**) is: in case of fruits - 6%; in case of vegetables - 5%; in case of cereal - 4%; other products - 5%.

Based on conducted individual survey results the the importance of agricultural insurance is aknolaged. 22% of respondants had early spring frostbite insurance package, 62% of respondents had hail insurance package and 16% of respondents had drought insurance packages.

TABLE 20 IMPORTANCE OF AGRICULTURAL INSURANCE IN SHIRAK MARZ

Three main weather related damages		
Early Spring Frostbite	Hail	Drought
22%	62%	16%

Source: Shen NGO survey, 2022

Types of crop loss in processing stage

Lack of potato storage units for processing or long-term storage

- There are no potato processing enterprises in Armenia. The third quality raw material obtained from potato sowing is completely decomposed, used as fodder, or left in the field, which is later a source of disease-pest infection. In general, we can say that 1 hectare of potatoes yields 2-4 tons of below-average quality, in case of poor agricultural equipment and poor quality planting material, the quantity will increase by at least 1-2 tons. If we calculate these volumes on a regional scale, we are talking about a loss of at least 20-25,000 tons. This is the amount that can vary depending on the year, but such raw materials will always be in the region.
- Availability of modern refrigeration facilities providing storage services. Large, well-maintained private farms do not provide services for smallholders.

Absence of carrots, table beets, cabbage storage units for processing or long-term storage: The lack of carrot, table beet, and cabbage procurement units is a big obstacle to increasing the cultivation of these crops. Even if farmers are ready to produce, they realize that they cannot provide proper protection. In the case of low or medium-quality harvest, there are no processing enterprises.

Loss of medium and low-quality fruit crop: There is no fruit processing unit in the Shirak region. Transportation to neighboring Aragatsotn and Armavir marz s is expensive. There are a number of fruits such as apples, cherries, and plums that can be purchased from the villages of Shirak, but even resellers do not work in the region. As a result, the product is rejected or exchanged.

Limited milk collection volumes due to the wear of the small to medium-sized production facilities equipment: Small/medium-sized dairy procurement units/enterprises in the region, and family businesses, procure a limited amount of milk because they do not have the necessary modern equipment. Many of them can sell more than their products, but they need to improve the production process and upgrade the equipment. Such small farms are very important for villages with small number of livestock or small livestock farms. They can provide a stable supply.

Types of crop loss in export stage

Lack of export: The export volumes of potatoes were very low from 2014 through 2018. Comparatively higher volumes were recorded in 2014 and 2015, which were rather sporadic and not sustained. In 2015 over 70% of exported potatoes were shipped to Georgia, and the remaining to Russia. However, this was a discrete jump in export, followed by a significant reduction, meaning that potato export has low and unstable potential.

Market remoteness, high costs, potato losses during the sales and transportation: Large quantities of potatoes are produced in the region, but due to the distance, they are not able to supply large supermarket chains in Yerevan and big cities. There are no storage refrigerators that can be used for direct delivery. Now the crop is sold at a low price of 10-20% directly to intermediaries coming from Armavir, Ararat, and Yerevan.

Lack of procurers: Procurers of large processing enterprises working in Armenia, which can ensure the sale of small to medium-sized products, do not work in the region. And not every farmer sells, many are forced to trade with neighboring villages. Losing their expected profit, spending much more time, and losing working capital.

Lack of freight providers: There is a need for specialized freight providers such as:

- Refrigerator trucks for milk storage
- Refrigerator trucks for storing vegetables, potatoes, carrots, beets, cabbage
- Small refrigerators for the transportation of wild greens, hornbeam, chervil, sorrel.

Types of crop loss in workforce and specialists stage

Violation of agricultural activities schedule - crop loss due to workforce: Manpower is low, and the cost of wages is rising every year. Much of the cultural work is delayed due to labor shortages. This in turn has a direct effect on yields as it reduces expected profits as labor costs and travel costs increase during fragmented irregular work.

Crop loss due to poor quality work: workforce: The work is paid on a daily basis. Today, it is impossible to think about improving the quality of work and productivity. Workers avoid normative work because in that case, the remuneration depends on the amount of work done and the quality.

Lack of skilled workforce: There are very few groups of skilled workers in the region. Some groups work with exporters sorting the potatoes for export. The work requiring professional skills is carried out in a non-professional manner, requiring more resources, money, and time to be spent. There is a great demand for specialized groups of workers: weeding, banking-up, sorting, pruning, etc.

Lack of machinery repair service specialists: Lack of specialists in the field of mechanization service, and repair. Equipment repairs take long, resulting in delays in widespread sowing. There is a need to train young mechanics-specialists in rural equipment service. Due to the lack of relevant knowledge of the use of modern tractors and other couplers, the introduction of modern equipment is rejected. The repairs being performed by specialists invited from Yerevan, which is costly and time-consuming.

Lack of agricultural consultants:

- There is a shortage of agricultural specialists in all villages of the region.
- Lack of professional knowledge and absence of consultants hamper the introduction of new crops by the farmers; they refuse to cultivate high-value crops without finding a solution to the problems encountered during cultivation.
- Cultivation costs double due to incorrect, incomplete advice.
- They get a low-quality crop.
- There is a great demand for greenhouses, plant protectors, fruit growers

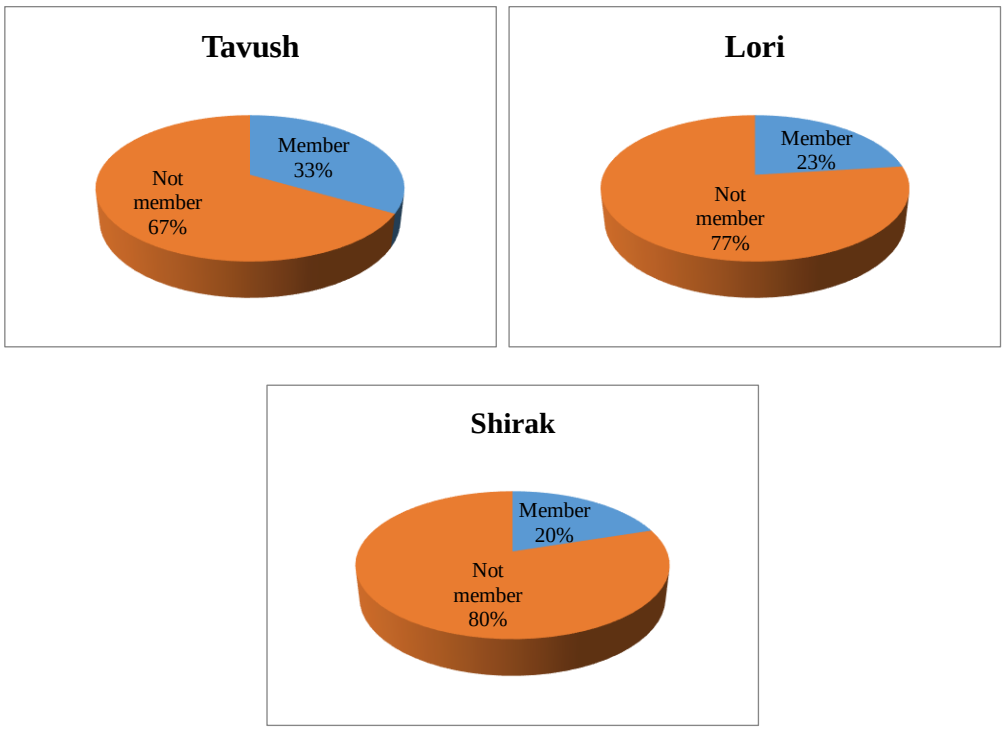
Lack of veterinarians, stockbreeders:

- Veterinarians are available in all communities, but the services of one or two veterinarians are not sufficient for large communities.
- Good professionals mostly work with large farms, while the problems of small farms remain unresolved
- Many farmers treat their own animal diseases, resulting in a loss of livestock.
- There is a need for specialists in poultry, rabbit treatment, and veterinary medicine.
- The problem of the veterinarian in the distant pastures is much more urgent because in the distant pastures they have already refused to seek help, in case of a problem the animals are killed immediately.

Lack of postharvest handling specialists: There is a great need for specialists in the operation of refrigeration facilities and storage in the marz. The lack of consultation and specialists lead to the sales of crops at a low price from the field. The extra profit that can be obtained when having storage capacities is not received by the farmer today. With their knowledge, as a result of improper storage, they lose huge volumes - 10-40% (by type) of stored food. Due to la ack of necessary knowledge, they refuse to grow high-value root crops in demand in the market: carrots, and table beets.

5.4 ANALYSIS OF QUESTIONNAIRES FOR COOPERATIVES

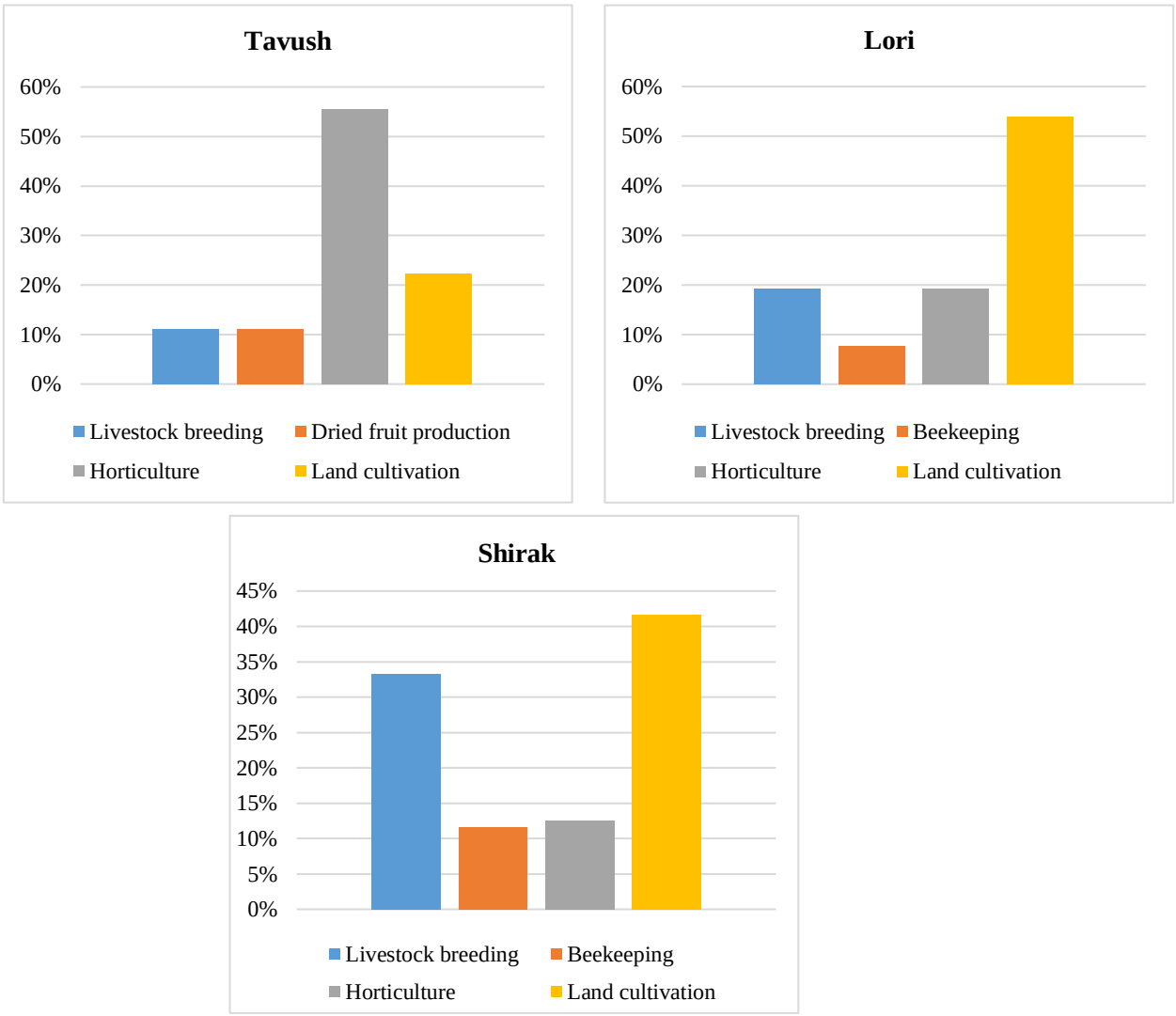
FIGURE 14 MEMBER OF COOPERATIVES FOR THREE MARZES



Source: Shen NGO survey, 2022

Respondents in Tavush marz 33 % are members of a cooperative and 67% are not members, in and Shirak marz 20 % are members of a cooperative and 80 % are not members of a cooperative and in Lori marz 23% are members of the cooperative and 73 % are non-members.

FIGURE 15 MAIN SOURCES OF INCOME FOR THREE MARZES



Source: Shen NGO survey, 2022

For 56% of respondents in Tavush marz, the main source of income is horticulture, for 22% is field crop cultivation, for 11% is livestock breeding and for 11% is dried fruit production.

For 54% of respondents in Lori marz, the main source of income is field crop cultivation, for 19% is livestock breeding, for 19% is horticulture, and for 9% is beekeeping.

For 33% of respondents in Shirak marz, the main source of income is field crop cultivation, for 33% is livestock breeding, for 13%is horticulture and for 12% is beekeeping.

TABLE 21 THE MAIN PROBLEMS (%)

	Small Land Plots	Limited Irrigation Water	Limited Financial Means	Absence of Agricultural Insurance	Old Technologies and Transportation	Traditional Ways of Cultivation
Partly Agree	19%	20%	8%	16%	21%	14%

Strongly Agree	71%	78%	88%	82%	72%	79%
Don't Agree	10%	2%	4%	2%	7%	7%

Source: Shen NGO survey, 2022

6. EXPORT POLICIES, INSTRUMENTS AND BOTTLENECKS OF ARMENIAN AGRICULTURE

Chapter 6 starts with the presentation of the current export position of Armenia in the global market and export of goods and services as percentage of its GDP. It continues with the summary of export related policies and instruments, following with the information in respect to the main food and agricultural legislations, for agriculture responsible institutions, export promotion, export infrastructure and export finance situation and possibilities. The presentation of, identified main export bottlenecks continues the chapter. Further, the best practice examples from different countries in that as well from Netherlands are presented and their relevance to further improvements of the situation in Armenia is shown. Finally, yet importantly, conclusions are made and policy recommendations are formulated.

6.1 EXPORT POSITION OF ARMENIA

Armenia in 2020, see ***Graph 3***, recorded the export of goods and services as percentage of its GDP *29.8%*. The aggregates of Europe and Central Asia summed up to *42.2%*, and the aggregates of Upper Middle income Countries showed *22.7%*, see ***Graph 3***.

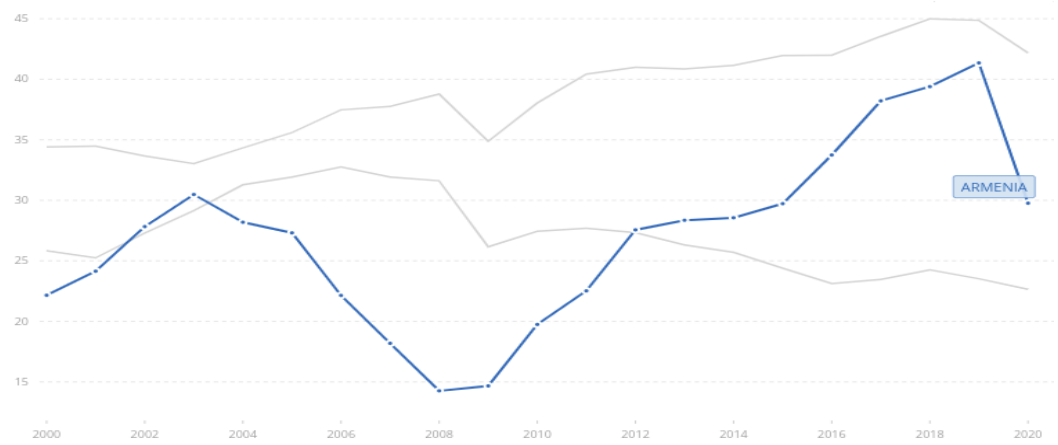
The Netherlands on the other hand in 2020, see ***Graph** 4*, recorded the export of goods and services as percentage of its GDP *77.9%*.

In 2020 Armenia was the number 132 economy in the world in terms of its GDP (US$), the number 128 in total exports, the number 136 in total imports, the number 112 economy in terms of GDP per capita (US$) and the number 77 most complex economy according to the Economic Complexity Index (ECI)[15].

[15] *https://oec.world/en/profile/country/arm#:~:text=In%202020%20Armenia%20imported%20%244.47,to%20%244.47B%20in%202020 (accessed May 3, 2022).*

Graph 5 and on ***Graph 6*** *show the* trade positions of Armenia and the Netherlands in respect to their export and import. In trade position of Armenia, the share of food production in terms of export volume in 2020 was *24.51%*.

GRAPH 3 EXPORTOF GOODS AND SERVICES (% OF GDP) ARMENIA

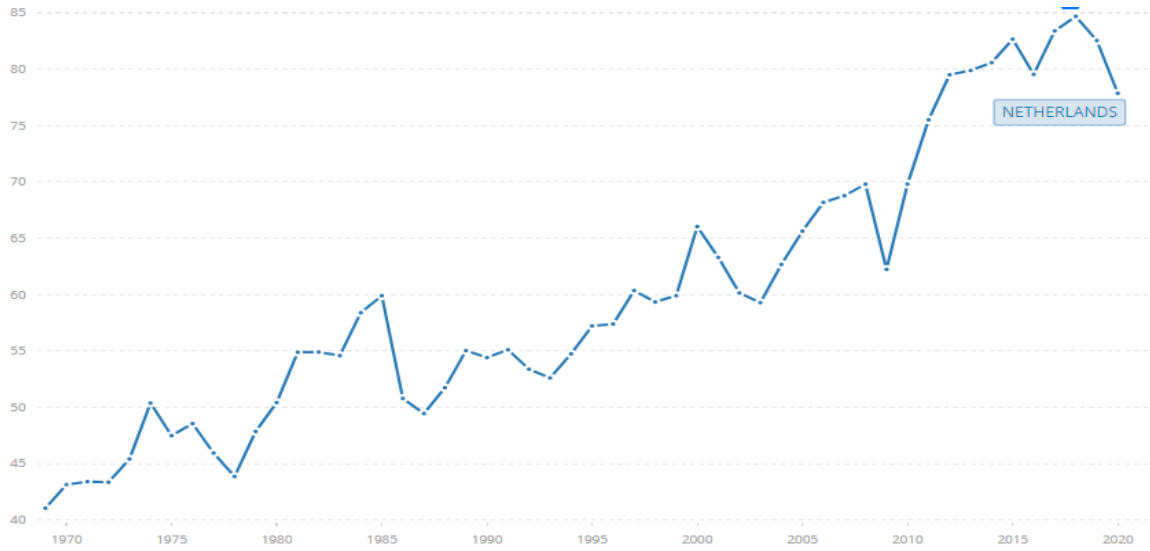


Source[16]**:** 2022 The World Bank, last available data

GRAPH 4 EXPORT OF GOODS AND SERVICES (% OF GDP) NETHERLANDS

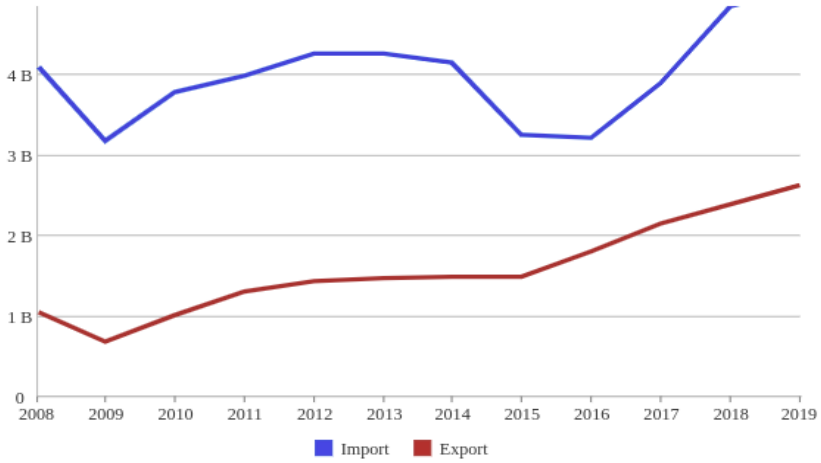
16

https://wits.worldbank.org/CountryProfile/en/ARM#:~:text=Armenia%20exports%20of%20goods%20and,percentage%20of%20GDP%20is%2054.55%25.(accessed April 29, 2022).



Source: The World Bank, last available data

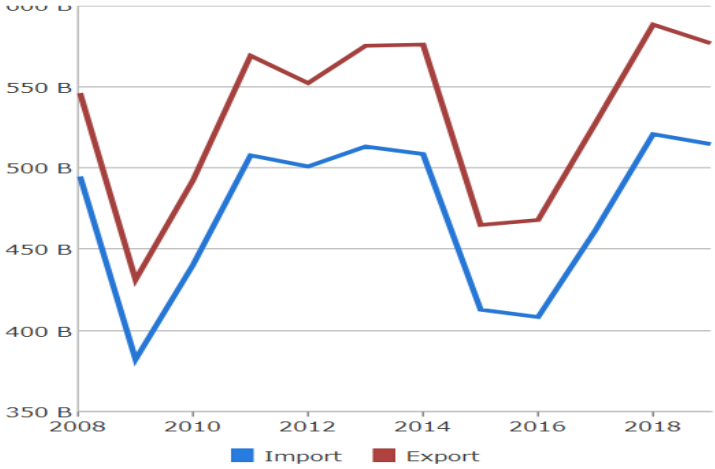
GRAPH 5 TRADE POSITION OF ARMENIA



Source*[17]*: The World Bank, last available data

GRAPH 6 TRADE POSITION OF NETHERLANDS

[17] https://oec.world/en/profile/country/arm?flowSelector1 *(accessed April 13, 2022).*



Source[18]: The World Bank, last available data.

The alcoholic beverages, particularly wine and brandy made from locally grown grape varieties were one of the most important exported food products, see **Table 22**.

TABLE 22 MAIN EXPORTED FOOD PRODUCTS FROM ARMENIA

Name of products
Alcoholic beverages - wine and brandy made from locally grown grapes
Fish
Cheese
Canned Fruits
James
Coffee
Mineral Water
Frozen Fruits and Vegetables

Source[19]: *Government of Armenia, last available data.*

6.2 EXPORT POLICIES, INSTRUMENTS AND STRATEGIES

The adequate and up to date export policies and export promotion strategies play a major role for countries trade and export success. The trade liberalization and integration in the global chain are necessary strategies for reaching the country's export expansion.

6.2.1 EXPORT POLICIES OF ARMENIA

Armenia pursues liberal foreign trade policies. Access to Armenian markets of goods is liberal in terms of official border and behind-the-border arrangements. Tariffs are low, not only by CIS standards but as well by international standards.[20]

Republic of Armenia became a member of World Trade Organization (WTO) in 2003 and it is a member of Eurasian Economic Union (EAEU) since 2015. All goods are subject to custom

[18] *https://wits.worldbank.org/CountryProfile/en/Country/NLD/Year/2019/Summary* (Accessed May 20, 2022).

[19] *https://www.trade.gov/country-commercial-guides/armenia-agriculture. Last published 2021-09-16 (accessed May 3, 2022)*

[20] *https://d-nb.info/1126647934/34*

declaration (Custom code of Armenia)[21].

Armenia's exported goods have to undergo a mandatory customs procedure and, certain products (e.g. fresh fruits, vegetables, food items), a supplementary non-customs procedure. The Customs Service of Armenia carries out the mandatory customs procedure. The exporters of fresh fruits, vegetables, and food items, need to apply to the Food Safety Inspection Body of the Government of Armenia and the Chamber of Commerce and Industry of Armenia to obtain the necessary documents[22].

The following documents need to be prepared before applying to the Customs Service[23],

- Agreement with the importing Company
- Phytosanitary certificate for products of plant origin
- Invoice
- Conformity assessment certificate for food items
- Freight cargo
- Certificate of country of origin and Organic Certificate for organic products
- Document describing the transportation arrangement

The exporter needs to carry out the weighing, packaging, labeling, and storing of goods. Inspections of products can be done on site at the exporter's location or at the custom's warehouse[24].

6.2.2 Responsible Governmental Bodies for Export

Several governmental bodies have responsibility for agricultural and related issues. **1.** The Ministry of Economy has primary responsibility for policy issues with respect to agriculture. Other key responsible bodies are **2.** State Service for Food Safety and its subsidiary veterinary, phytosanitary, and food safety inspectorates, the **3.** National Body for Standards and Metrology under the Ministry of Economy, and the **4.** State Health Inspectorate under the Ministry of Health.

6.2.3 Customs Requirements, Phyto-sanitary Regulation by Product Category and Certificate of Origin

The export of plants, plant products, and other food items is carried out in accordance with the phytosanitary requirements of the importing country. The phytosanitary certificate is issued for each of the cargo type. The Food Safety Inspection Body is responsible for issuing the export phytosanitary certificate. In case the exporter submits a phytosanitary passport, proving that the samples are tested and are free from quarantine - harmful organisms the State Food Safety Service of the Ministry of Economy issues the certificate immediately[25].

[21] *https://wits.worldbank.org/CountryProfile/en/Country/NLD/Year/2019/Summary* (accessed on April 2022).

[22] *http://www.isc.am› media › 2020/12/21. Agri-Product Exporters' Toolkit*

[23] *https://wits.worldbank.org/CountryProfile/en/Country/NLD/Year/2019/Summary*, (accessed April 9, 2022).

[24] *https://www.petekamutner.am/Content.aspx?itn=csCICustomsWarehouses.*

[25] *https://www.arlis.am/DocumentView.aspx?docid=74433*.

The Chamber of Commerce and Industry of Armenia is the authorized body that issues the certificate of country of origin of goods. When the examination process is finalized, a Certificate of Origin is issued[26].

6.2.4 EXPORT PROMOTION STRATEGIES OF ARMENIA

The Chamber of Commerce and Industry of Republic of Armenia[27] has a primary mission to support the improvement of business environment, to promote export and investments, to support small and medium enterprises, providing economic growth of the economy as a final result.

Aiming at solving the mentioned problems the Chamber undertook a number of functions as follows:

- To promote competitive product manufacturing and enhancement of export potential
- To provide services to member organizations
- To assist the establishment of cooperation between business organizations, and becoming bridge between business organization and state bodies
- To organize business forums, exhibitions and fairs
- To contribute to the establishment and development of business promotion infrastructures
- To cooperate with other business promotion institutions, integrate all Chambers of Commerce and Industry within territory of the country
- To exchange know-how with various international institutions
- To encourage CCI of RA member companies' engagement in valuable projects which can be effective for creating sustainable business environment
- To support businesses get access to funding
- To provide business development and incubation services to startups
- To provide other services aimed at the improvement of the country's economy.

Chamber of Commerce and Industry of the Republic of Armenia has overseas Representatives in 9 countries, in that as well in Germany.

There are at least three business platforms, which provide support to exporting companies

a) Business Support Office (BSO) is the Council, which is a consultative body, aimed to promote business environment development in the sphere of Small and Medium Entrepreneurship, identify barriers for activity implementation by SMEs and provide solutions for eliminations of such barriers through implementation of public-private dialogue[28]. Sub-Council acts under the Ministry of Economy, ensures preliminary discussion and provision of proposals of the issues to be presented for the Council discussion.

The structure of the Council consists of public sector representatives, private sector representatives as well as of representatives of those international organizations, which are expressing the will to provide technical support to the council in organization of Council activities.

The principles of the Council activity are:

[26] *www.armcci.am.*

[27] *https://eenarmenia.am/en/multicontent/usefull_links/292/* (accessed May 30, 2022). Note: All above information is from eenarmenia website.

[28] *http://www.bso.am/*. Note: The above information is fully imported from bso website. (accessed 15 June, 2022).

1) transparency of the activities

2) equality of rights of the members of the Council

3) assurance of private sector involvement.

The functions of the Council are:

1) discussion of the issues actual for SME development

2) discussion of relevant proposals, presented for SME development by means of Council

Secretariat

3) adoption of relevant decisions, concerning proposed solutions

b) Enterprise European Network Armenia29 is a European initiative, aimed at providing innovation and business support to all businesses across the European Union and beyond. Lunched officially in February 2008, the network comprises close to 600 partners in more than 60 countries offering a wide range of services to businesses (http://een.europa.eu). The Fund 'Investment Support Center' (former SMEDNC Fund) is the Business Cooperation Center of European Network Armenia.

The activity of Enterprise Europe Network Armenia is directed to the internationalization of Armenian entrepreneurship and to consolidation of their opportunities for entering into European markets, to development of their innovative capacities and technological advancement. Starting from 2016, the Fund "Investment Support Center" has created a Consortium with the National Academy of Science of the Republic of Armenia, which hosts the Enterprise Europe Network in Armenia.

In order to promote the international cooperation, the Enterprise Europe Network periodically is organizing number of regional, national and European level events. The events give an opportunity to meet the possible partners and receive the necessary information for entering into European market. *In general, about 200 Armenian companies are getting support within the Enterprise Europe Network yearly.*

c) Access2Markets[30] is the platform that Armenian businesses can use to obtain information about Exporting from EU, importing into the EU – all you need to know

Access2Markets allows to obtain information needed for the trade with third countries, such as on tariffs, taxes, procedures, formalities and requirements, rules of origin, export measures, statistics, trade barriers and much more. It also allows to access key information needed for trade in services as well as for investment and procurement in third countries. It as well provides information about EU trade agreements, how to benefit from them and provides support for export and for import.

6.2.5 EXPORT INFRASTRUCTURE OF ARMENIA

The Government of RA implements one stop one window regulation for both import and export of goods to easy the procedures and to reduce the necessary time. In addition, it looks for

[29] *https://eenarmenia.am/en/content/eeninarmenia/*, Note: The above information is fully imported from EEN website. (accessed 14 June, 2022).

[30] *https://trade.ec.europa.eu/access-to-markets/en/home*, Note: The above information is fully imported from website. (accessed 15 June, 2022).

alternatives to the road transportation. The ferry transportation will start to function as alternative to road transportation starting from end of June 2022, as stated by the Minister of the Economy of RA. The government for the beginning will subsidize the costs for six months. In a long ran, it is expected that private businesses will take the lead.

There are 12 logistic centers in Armenia. Nine out of twelve centers are located in Yerevan, one in Abovyan, one in Ashtarak, and one in Akunk village. Twelve logistic centers are as follow: Ararat Food Factory, Mer Sarer, Spayka, Urban Logistic Service (ULS), Eco Fruits, Best Fruit Logistic Center, Rival, ICE House Logistic Complex, Brand Leader, Aghorig, Artfood and Ecokat.

However, there is a lack of centralized storage, cooling and freezing facilities especially near export points (e.g. airport). There is a place for higher level of digitalization and more intensive integration of IT in export/import (e.g. auctions) relations.

6.2.6 EXPORT FINANCE OF ARMENIA

The export Insurance Agency ICHSC of Armenia[31] is the insurance company, which insures Armenian resident companies against the risks of non payment of their foreign buyers under the export contract subject to political and commercial risks. The company insures the invoices on each of the export stage. The exporter gets the opportunity to

- Control export risks, trade with confidence on existing and new international markets
- Enhance your competitive positions in international markets by offering your customers differed payment terms
- Obtain financing from domestic commercial banks secured by insurance policy under simplified procedures and preferential terms
- Build long term beneficial partnership with overseas buyers being assured that the receivables are protected from potential and commercial risks of the buyer.

6.2.7 THE LOGISTICS PERFORMANCE INDEX OF ARMENIA

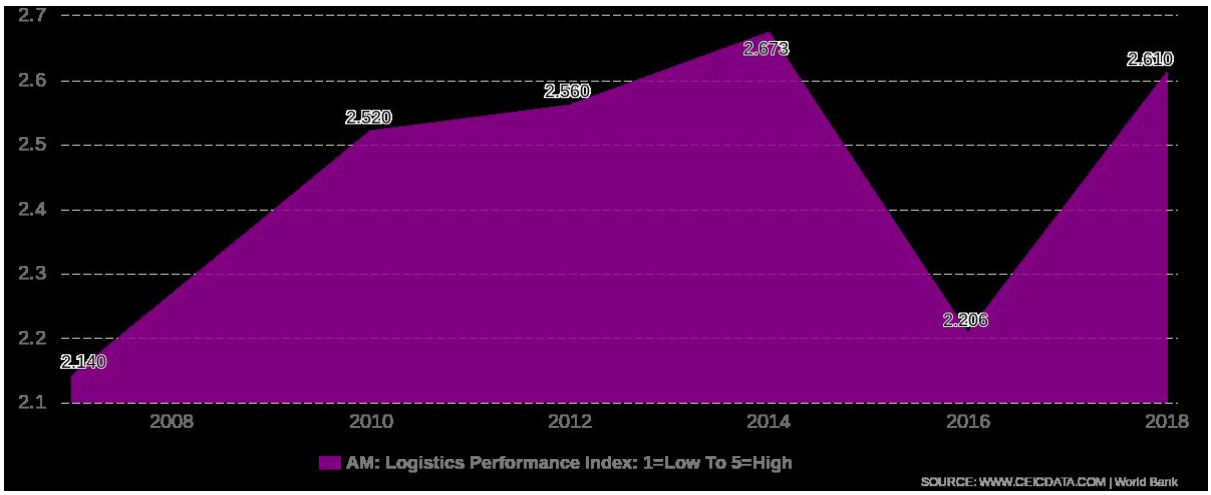
The logistic Performance Index (LPI) of Armenia, the index showing the quality of countries trade and transport related infrastructure (1 = low to 5 = high) in 2018 amounted to ***2.61*** (see **Graph 7**). The Netherlands and Germany in the same year showed LPI scores equal to ***4.21*** and ***4.20*** respectively (see ***Table 23***).

Comparative representation of the LPI of Armenia in relation to aggregated LPI of Europe and Central Asia, and of upper and middle income countries is shown in ***Graph 8***[32].

GRAPH 7 LOGISTIC PERFORMANCE INDEX OF ARMENIA BY YEARS

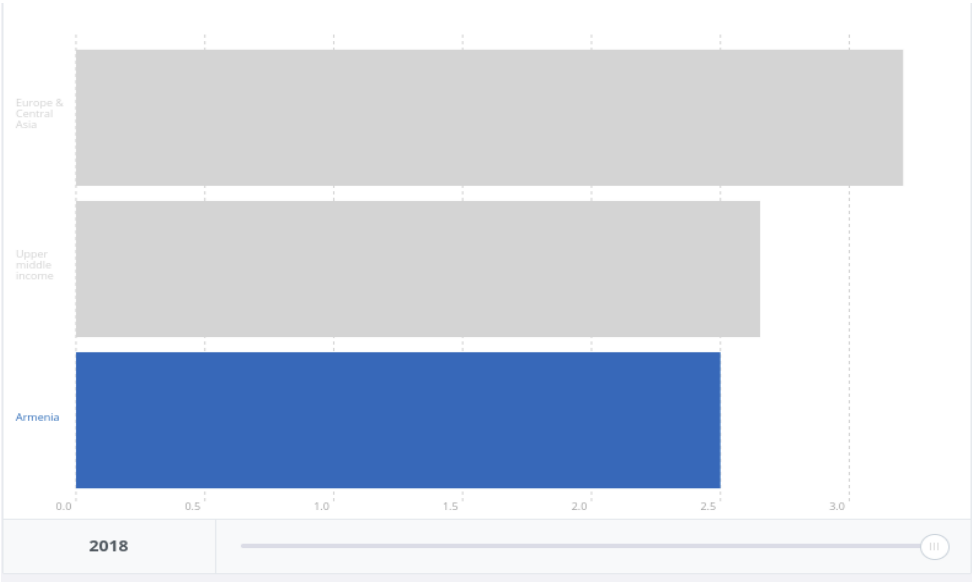
[31] *http://www.eia.am/en/*. Note: All above information is integrated in the report from the eia website (accessed May 14, 2022)

[32] https://lpi.worldbank.org/ (accessed May 07, 2022).



Source*[33]*: The World Bank, last available data.

GRAPH 8 COMPARATIVE REPRESENTATION OF LOGISTIC PERFORMANCE INDEX OF ARMENIA



Source[34]**:** The World Bank, last available data.

Table 23 presents the **LPI** scores of Armenia in comparison to the scores of most successful economies.

Armenia can learn from practices of these countries to optimize its trade success. The experience of these countries will be presented in more details in best practice example section.

[33] *www.worldbank.com* (accessed May 07, 2022)

[34] *https://data.worldbank.org/* (accessed May 07, 2022)

TABLE 23 LOGISTIC PERFORMANCE INDEX COMPARISON

Logistic Performance Index Score in 2018		
Netherlands		4.21
Germany		4.20
Sweden	4.05	
Belgium	4.04	
Austria	4.03	
Japan	4.03	
Armenia		2.61

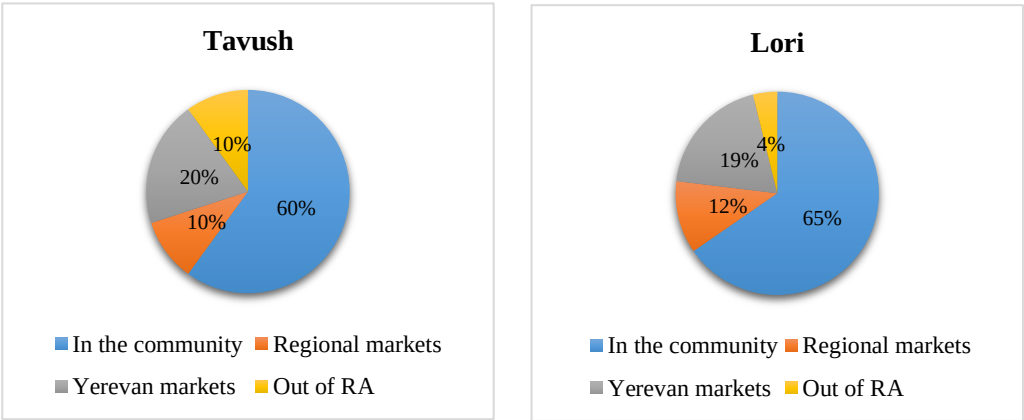
Source[35]**:** The World Bank, last available data.

6.3 EXPORT RELATED BOTTLENECKS AND FURTHER CHALLENGES

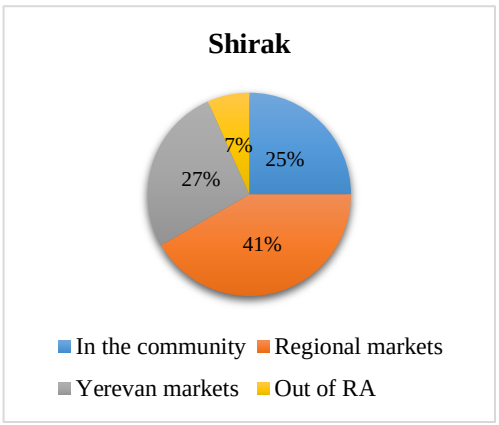
6.3.1 FARM LEVEL EXPORT CHALLENGES

Agricultural producers predominantly are involved in small-scale production, which limits their possibilities to think about export. Most of agricultural producers sell their produce inside of Armenia, often on the farm gate, on local market or in the market in Yerevan. In addition, they lack information about potential export market opportunities. The lack of knowledge related to export procedures, documentations, certifications and sanitary requirements of foreign countries are other limiting factors. The lack of information and not optimally established market linkages give space for the functioning of supply chain intermediaries (individuals or often-big processing companies). On the one hand, it provides a possibility for farmers to sell their produce. On the other hand, the presence of intermediaries extends the length of food supply chain leaving farmers with less and unfair income.

FIGURE 16 MAIN SOURCES OF INCOME IN THREE MARZES



[35] https://lpi.worldbank.org/ (accessed May 10, 2022).



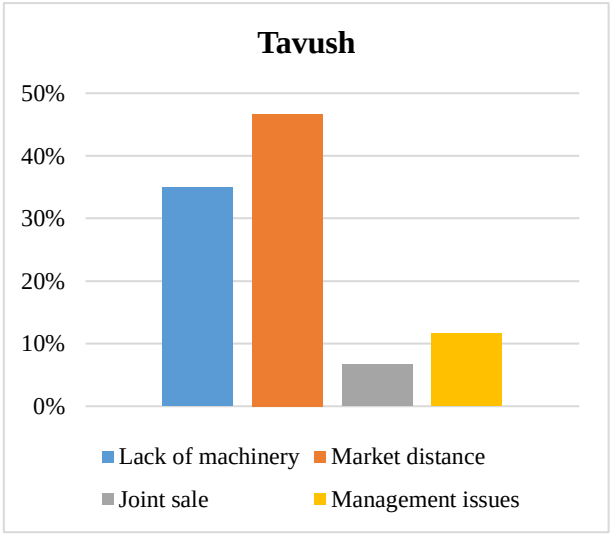
Source: Shen NGO survey, 2022

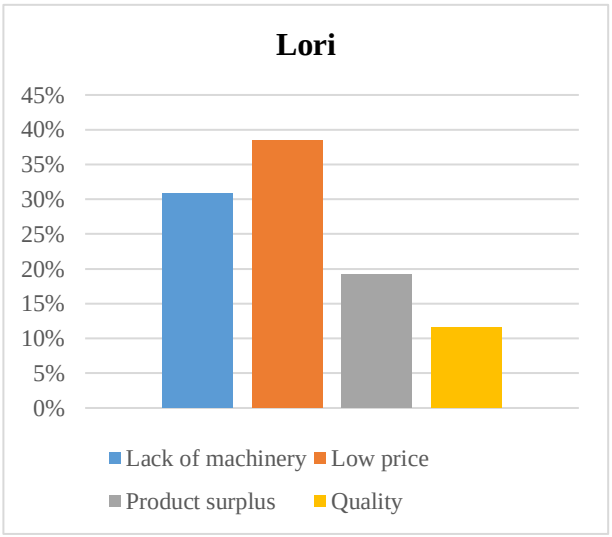
Respondents in the Tavush marz sell 60% of their products in the community, 10% in the regional markets, 20% in Yerevan, and 10% outside the RA

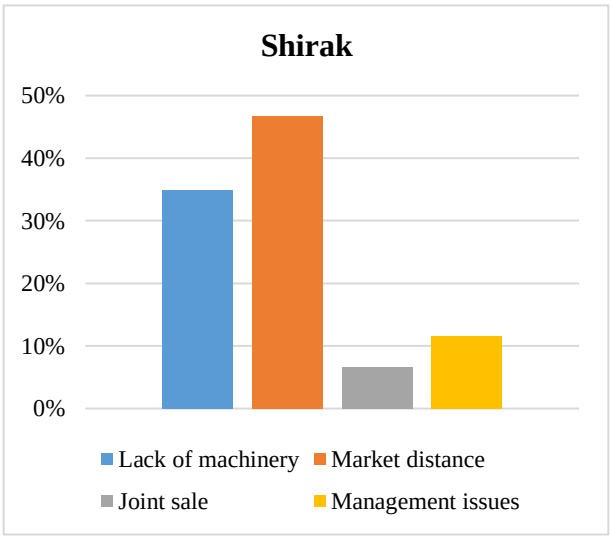
Respondents in the Lori marz sell 65% of their products in the community, 12% in the regional markets, 19% in Yerevan, and 4% outside of the RA

Respondents in the Shirak marz sell 41% of their products in the regional markets, 25% in the community, 27% in Yerevan, and 7% outside of the RA

FIGURE 17 PROBLEMS WITH SALES IN THREE MARZES







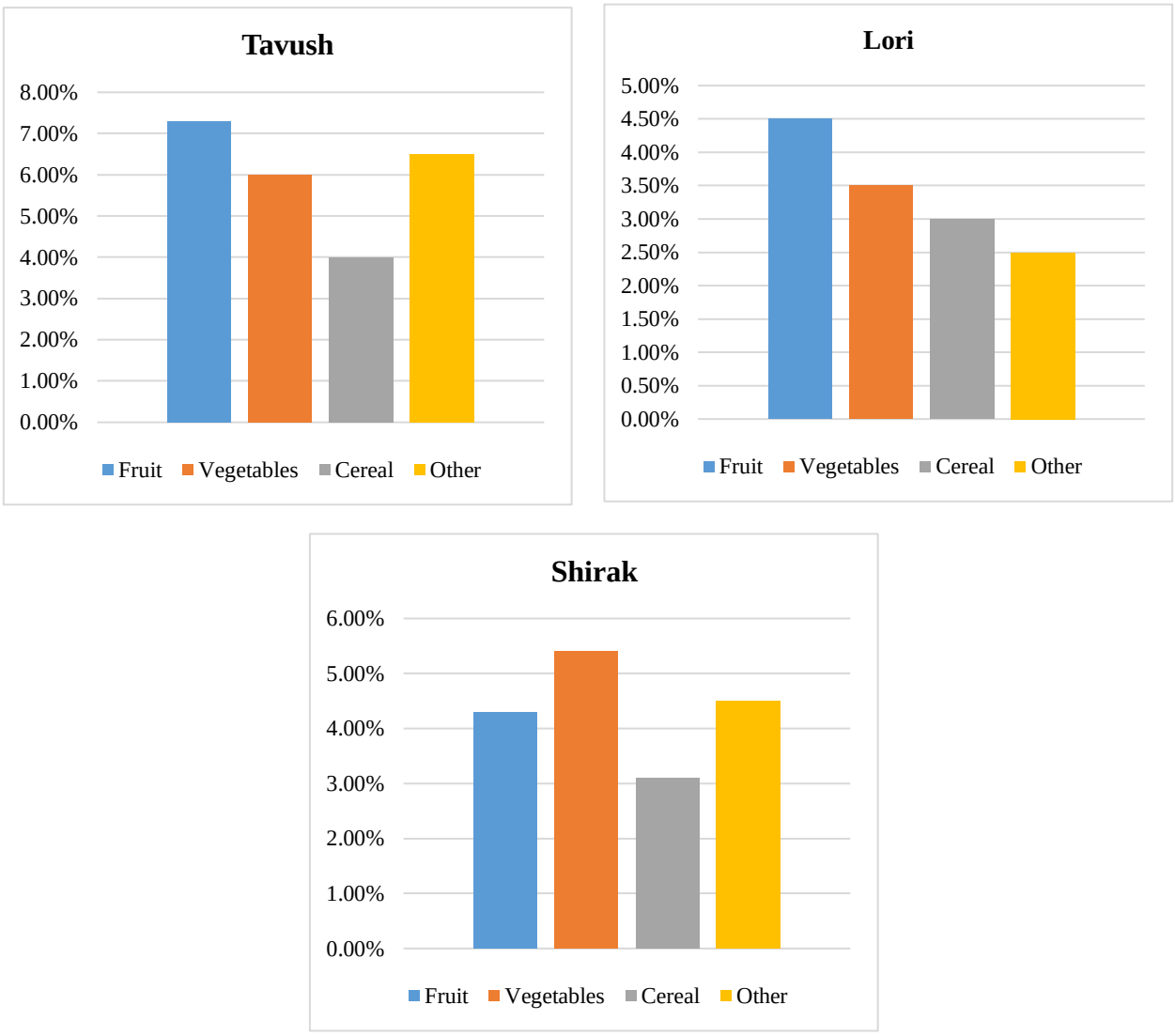
Source: Shen NGO survey, 2022

In Tavush marz respondents note that the average loss during the sale is: in case of fruits - 7.3%; in the case of vegetables - 6.0%; in the case of cereal - 4.0%; other products - 6.5%,

In Lori marz respondents note that the average loss during the sale is: in case of fruits - 4.5%; in the case of vegetables - 3.5%; in the case of cereal - 3.0%; other products - 2.5%,

In Shirak marz respondents note that the average loss during the sale is: in case of fruits - 3.3%; in the case of vegetables - 5.4%; in the case of cereal - 3.1%; other products - 4.5%,

FIGURE 18 PRODUCT AVERAGE LOSSES DURING SALE IN THREE MARZES



Source: Shen NGO survey, 2022

In Tavush marz respondents note that the average loss during the sale is: in case of fruits - 7.3%; in the case of vegetables - 6.0%; in the case of cereals - 4.0%; other products - 6.5%,

In Lori marz respondents note that the average loss during the sale is: in case of fruits - 4.5%; in the case of vegetables - 3.5%; in the case of cereals - 3.0%; other products - 2.5%,

In Shirak marz respondents note that the average loss during the sale is: in case of fruits - 3.3%; in the case of vegetables - 5.4%; in the case of cereals - 3.1%; other products - 4.5%,

The small number of farmers who themselves organize the export of their produce mainly rely on own personal connections. They focus on markets where there is established knowledge about Armenian products. These are Russia, Georgia and/or Commonwealth of Independent States (CIS).

Armenia's export ways especially on large-scale export rely mainly on road transport. In case of border closures (as in COVID -19 times) serious destruction occurs. Further, the unpredictable conditions at the border crossing between Georgia and Russia create additional uncertainties.Moreover, the current situation between Russia and Ukraine makes the situation even more uncertain.

Because of limited open transportation possibilities, Armenia has more export potential for processed products. The perishable goods such as fresh fruits and vegetables record high loses in the case of boarder closers.

Thus, as the literature states processed food and alcoholic beverages, especially wine and brandy made from locally grown grape varieties are the most important products for export. Armenia's soil and climate conditions, high altitude, and limited use of chemical fertilizers account for flavorful produce and present the comparative advantage for the country[36]

6.3.2 Export Related Bottlenecks of Armenia

Our findings in respect to export related bottlenecks are in line with existing studies and empirical literature. In the frame of our study export related bottlenecks, are conditionally divided in two main levels, as follows:

- Bottlenecks on producers', SME and other exporters' level
- Bottlenecks on external environment and export policy level

Bottlenecks on producers', SME and other exporters' level

Export related main bottlenecks on producers' level are

- small production quantities,
- low productivity, spoilage and loss during harvest, post-harvest handling and transportation,
- lack of knowledge about potential export market opportunities,
- lack of knowledge about foreign markets requirements,
- lack of knowledge about export market product quality requirements,
- lack of knowledge about for export responsible institutions,
- lack of knowledge about export procedures and necessary documents.

Export related main bottlenecks on SME and other exporters' level are

- difficulty to obtain for export necessary product quantities of required quality,

[36] *Food Systems Summit 2021: National Pathway for Food Systems Transformation in Support of the 2030 Agenda,* The Republic of Armenia, *S. Avetisyan (2010), https://www.trade.gov/country-commercial-guides/armenia-agriculture.*

- high transaction costs, often high logistic costs related product collection and transportation,
- especially high costs of refrigerated transportation (e.g. fresh fruits and vegetables),
- poor rural infrastructure,
- not optimal market linkages (export promotion, market intelligence services) between the producers, processors or exporters up in the value chain which is reflected in Logistic Performance Index (**LPI**) score of Armenia, see **Section 3.4**.
- lack of for export governmentally supported centralized storage capacity,
- limited possibilities to obtain export credit or other for export meant funding/financial support.

Export related main bottlenecks on external environment and export policy level

- Armenia's export ways as mentioned above especially in respect to large-scale export rely mainly on road transportation. This contains a serious risk of distractions in case of border closer, caused by objective and subjective reasons (e.g. COVID 19 quarantine). In addition, unpredictable conditions at the border crossing between Georgia and Russia create additional uncertainties. Further, at present the armed conflict between Russia and Ukraine makes the situation even more uncertain.

The Minister of Economy Vahan Kerobyan states that Armenia faces the problem during import and export as the Upper Lars checkpoint from time to time is closed, and cars are crowded from different directions. This issue gets more importance in the current situation, when food security becomes one of the most important issues for every country. *The above-mentioned reasons result to delayed cargo transportation, spoilage and lose of especially perishable goods - fresh fruits and vegetables.*

The government is currently approving the measure aimed at reducing additional costs incurred in case of transportation of goods by ferry (ferries) for export or import from the territory of the Republic of Armenia.

According to Mr. Kerobyan, the Ministry offers to subsidize the costs of regular (twice a week) Poti Port Caucasus ferry transportation service. This measure is implemented in order to be able to transfer a significant part of Armenia's logistics to rail transport for some time. It will significantly increase food security and logistical access to Armenia, will significantly increase the competitiveness of Armenia's industry and will play an important role in food security.

Prime Minister Mr. Nikol Pashinyan mentions that this is not Armenia's first attempt to establish a ferry connection. The previous ones have not always been successful. The peculiarity is that, of course, there is a possibility of by car transportation; in this case however, the emphasis is on railway transportation. The subsidy will for the beginning be implemented for 6 months[37].

The air cargo is considered for transportation of small quantities of fresh fruits and vegetables, as well as fresh cut flowers because of their short life.

[37] *https://www.aravot.am/2022/03/25/1255878/* (accessed May 13, 2022).

Road transportation is still considered the most important way for transportation of frozen agro products, processed fruits and vegetables due to their long shelf life.

The Government of Armenia at the border has introduced **one stop - one window** principle to easy export procedures. As stated by Mr. Rustam Badasyan. "With the package of laws, the control exercised by different bodies at the state border are optimized, and the principle of one stop – one window." is now working[38].

Though several export support infrastructure improvement measures are already undertaken, there is still much place for further improvements. Especially in the field of export promotion, market intelligence, further export infrastructure improvements, export finance and linking SMEs to multinationals much can be learned from most successful economies, ***see Section 3.6****.*

The findings of existing empirical literature are supported by the primary data obtained during the face to face interviews conducted with the managing directors od SIS Natural and Ijevan Group processing and exporting companies. The respondents have been asked to rank the difficulties SME processors and exporters face (1 = least important, 6 = most important). The results are shown in **Table 24**.

TABLE 24 RANKING OF EXPORT DIFFICULTIES

Named Difficulties	
Limited sources and data on market intelligence information, especially in respect to EU market	6
No centralized for export specific storage, cooling, and freezing facilities	6
Limited access to export credit, single possibility based on export insurance guarantee	6
Not established 'Made in Armenia' BRAND. Limited knowledge of and low trust level to Armenian products (especially in EU)	5
Limited use of innovative technologies, difficult to meet standardization requirements	5
Limited quantities, especially meeting importing country requirements	5
Low price competitiveness especially compared to other regional providers of neighboring countries	4

Source: *Shen Interviews, 2022*
Note: *The ranking is based on personal assessments of respondents. The results are particularly relevant to markets where Armenian products are yet not known.*

6.4 BEST PRACTICE EXAMPLES

6.4.1 EXPORT PROMOTION

Netherlands:

International trade and foreign direct investment shape the Dutch economy. In 2018, a third of Dutch wealth was created through exports. The domestic added value of exports accounted for

[38] https://www.panorama.am/am/news/ (accessed May 21, 2022).

EUR 262 billion. In the same year, imports amounted to EUR 391 billion; and in 2019, the Netherlands was the world's second largest outward investor[39]. Dutch companies are part of global value chains. They are involved in triangle trade that is a multilateral system of trading in which a country pays for its imports from one country by its exports to another[40].

Government policies are directed towards enhancing international competitiveness. There is an established strong cooperation between government, businesses, education, research and extension. The government strongly supports education and knowledge development as a way to international competitiveness. In respect to business development and export policies, the

- Government acts as business facilitator (e.g. Round Tables) and not as subsidy provider
- Facilitation policies emphasize the role and responsibility for private businesses in trade issues
- Public-private partnerships implement export promoting policies and international investment strategies (e.g. Partners for International Business program)[41],
- Investments abroad is implemented as alternative to trade, and are seen as another important contribution

Various export-promoting instruments are used:

- There is an established *agricultural counselors network* around the world which plays the role of the trouble shooter, networker, market information provider.
  There are 48 Dutch embassies and consulates involved in export promotion activities. Agricultural counsellors and attachés are in the economic departments. They offer support in more than 75 countries. Together with their teams of local advisors, the agricultural attachés assist Dutch entrepreneurs, companies and knowledge institutes. They also represent the Netherlands at international organizations, such as FAO/WFP/IFAD in Rome, the European Union in Brussels, and the OECD in Paris[42.] They also promote and represent Dutch governmental policy about agricultural issues worldwide. This includes the global transition towards sustainable agriculture, contributing to the Sustainable Development Goals of the United Nations.
- Strictly following *the standards on food safety and quality* are key conditions in international trade relations, so the specialized institutions work to ensure the requirements are met.
- To this purpose continues improvement to build institutions that help prevent and combat (animal and plant) diseases, apply and monitor quality control, and offer services that reduce paperwork and procedures associated with international trade are taking place
- Market access teams aim to solve issues related to foreign sanitary and phytosanitary requirements
- Export promoting missions (fair visits, etc.) are regularly taking place[43]

[39] *Peter van der Knaap, 2021.*

[40] *Siemen van Berkum, 2017.*

[41] *www.rvo.nl* (accessed May 30, 2022).

[42] *https://english.rvo.nl/partners-network/international-economic-network/netherlands-agricultural-network* (accessed June 10, *2022). Note: The above information is fully imported from rvo website.*

[43] *Siemen van Berkum, 2017.*

Germany and Spain have merged and brought together the actors responsible for export promotion *and invest-in activities.*

***Germany*:** Germany Trade and Invest - (GTAI) is the economic development agency of the Federal Republic of Germany. With more than 50 offices in Germany and abroad and its network of partners throughout the world GTAI supports German companies setting up in foreign markets, promotes Germany as a business location and assists foreign companies setting up in Germany. The key export promotion actors are as well the German Chambers of Commerce Abroad (AHKs)[44] and foreign missions. GTAI acts as a network hub – the provision of market intelligence being its most important service. GTAI is the first point of contact for Germany's export-oriented small and medium-sized enterprise (SME) sector. The business analysts regularly report on 120 countries and provide the knowledge base for planning and conducting foreign business activities[45].

Denmark: In Denmark, all key actors are involved in export promotion – this also includes development cooperation and invest-in activity. All the actors are part of the same unified structure organized under the Ministry of Foreign Affairs (MFA).

Spain: España Exportación eInversiones (ICEX) is the responsible agency in Spain.

All actors operate under the ministry responsible for trade. This means that the Ministry of Foreign Affairs, the network of embassies and consulates overseas all are linked to export promotion activities. ICEX international activity is conducted from the Spain Embassy Commercial and Economic Offices worldwide. ICEX uses the Internet Portal www.spainbusiness.com to display information about exporter Spain companies that are included in the ICEX Database of exporting Spain companies. www.spainbusiness.com, in collaboration with the Spain Economic and Commercial Offices, presents a meeting place where companies and professionals interested in doing business in Spain may access macroeconomic and commercial data, as well as other relevant information about exporter Spain companies.

The network of foreign offices is an important part of export promotion. Ambassadors and other high level civil servants open doors for businesses, the premises of embassies and consulates host events and negotiations and the staff of these institutions have both contacts within and knowledge about the target markets[46].

Interested companies pay at least part of the export promotion services they use as an enforcement mechanism to be committed.

Czech: The Czech export-promotion agency combines marketing, research and training activities.

Case studies from above mentioned countries show that different types and combination of export promotion agencies can exist. These agencies provide knowledge as well as training, and focus their marketing efforts on a ***country brand***.

[44] *https://www.ahk.de/* (accessed May 23, 2022).
[45] *https://www.gtai.de/* (accessed May 23, 2022).
[46] *https://www.bircham.net/spain-icex-instituto-espanol-de-comercio-exterior.html* (accessed May 26, 2022).
H. Rannikko,·2018 *https://www.eesc.europa.eu* (accessed May 22, 2022).

6.4.2 EXPORT INFRASTRUCTURE

Netherlands:

As stated in OECD 2015 analysis report, p.58, the most notable Dutch success example is Flora-Holland at Aalsmeer[47]. It combines storage and transport links, has a *state-of-the-art facility* with special storages adopted to the specific requirements of flowers.

Flora-Holland provides a centralized export storage facility – the market for tulips, by that provides an easy and on- the-spot opportunity for quality checks and grading, and for customs administration.

This is a combination of a centralized storage and single-window regulation.

The flower market provides an agglomeration point for small- scale and fragmented flower producers. It provides a single export stop that is very close to the biggest commercial airport and a nearby seaport[48].

This is a demonstration of a successful integration of *one-stop window* for regulatory needs with *a one-stop window for export customs*.

Finally, *it gives a possibility of IT auction* where demand and supply can meet and obtain a competitive price.

Large storage facility *'Warehouses'* and *cooling/freezing facilities* are in place. Overall, the Netherlands has the second largest cooling and freezing storage capacity in the EU Processing infrastructure[49].

Digitalization:

Netherlands:

- the digitized mechanisms and auction markets are well established. The key to improving the cost and time efficiency of the processing and auctions are the IT systems.

Germany, Denmark and Spain:

- use digitalization as a suitable tool for supporting the growth and internationalization of companies.

Spain:

- a lot of information such as the analysis of export potential as well as commercial documents, customs formalities and certificates are provided online. Alongside information, training is also being digitalized.

6.4.3 EXPORT FINANCE

Netherlands

- Agribusiness sector contributes (in kind and via fees) to market access improvement efforts. The Netherlands Enterprise Agency (RVO) is a general counter for international business and helps with grants, match-making, market intelligence and compliance with

[47] OECD 2015 analysis report, p.58
[48] OECD 2015 analysis report, p.58
[49] *OECD analysis*

foreign regulations. The Netherlands Enterprise Agency (RVO) helps entrepreneurs and organizations to invest, develop and expand their businesses and projects both in the country and abroad. RVO is government agency that carries out the Dutch Ministry of Economic Affairs and Climate policy. It help entrepreneurs, NGOs, knowledge institutes, policymakers and organizations. It supports entrepreneurship, improves collaborations, and strengthens positions through funding and networks. By sharing know-how, it helps companies to move forward doing business abroad[50].

- Dutch Good Growth Fund (DGGF) provides finance and insurance of Dutch SME trade and investment for doing business in an emerging market or in a developing country. If there is an investment fund that invests in businesses in such countries, DGGF helps with funding.
- Dutch Trade and Investment Fund focuses on non-DGGF responsibility countries and is open to all Dutch companies

Denmark

- *Trade Council* provides information, advice and/or financial support to businesses. Businesses can also receive help from business organizations, such as when participating in trade fairs; from regional business development centers (Vaeksthus in Danish) and from seven innovation centers around the world.

Denmark, Germany and Spain

- Companies can rely on the public sector for export credit guarantees.

Estonia and *Italy*

- Export credit support is done in a transparent way, *in partnership with the private sector, and with appropriate risk assessment tools.*

Estonian

- Government created an export and credit guarantee fund, KredEx, especially tasked to support SMEs.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

7.1.1 CONCLUSION FOR PRODUCTION:

The challenges raised through meetings and discussions in the three beneficiary provinces are specific, depending on the product, and general problems common to all. The losses of agricultural products are registered in the beneficiary provinces among all actors in the value chain, with a large share, around 20-40% falling on the first two stages of production - the original production and postharvest handling. The reasons for these losses and the obstacles are the same in all regions. Their means of improvement must also be implemented following the same general principle. The issues common to all beneficiary provinces are listed below.

[50] *https://english.rvo.nl/about-netherlands-enterprise-agency* (accessed May 24, 2022).

Level	Bottlenecks
Improper problem detection, non-targeted support	The issues raised by all the target groups contain a "claim" for the government, donor organizations, and NGOs. All the actors in the value chain of agricultural production - farmers, processors, intermediary sellers, agricultural inputs suppliers, cooperatives, and exporters - considering the problem to be a part of their value chain, do not at the same time consider that the solution (of some existing problems) is in their hands. They underestimate the issues of self-investment, self-criticism, and self-education. Very often requirements and problems arise, which can be solved at the level of community, region, cooperative and even on a farm. When raising the issue, they ignore the causes of the problem, many of which come from the first line of production, the producer/farmer. Many support programs, giving partial support, create greater barriers. From this point of view, the first target barrier to be reflected and to be taken into account in all investment functions is whether or not the beneficiaries will be able to make a SWOT analysis of their production. Raising the issue, there is a need to analyze it, to find out the real reasons; the most important thing is to consider solutions to the problem, where the primary role is played by the producer.
Soil analysis and rapid deterioration of soil quality	For more than 30 years the land resources have been exploited ruthlessly, without any land quality improvement measures or crop rotation being applied. The anthropogenic factor was accompanied by the rapid negative impact of climate change over the last 10 years. The decline in soil quality is noticed in all types of land: arable land, perennial plantations, grassland, pasture, and forage. Every year there is an increase in various branches of rural production: a number of diseases, declining yields, and declining quality. These are all conditioned by the sharp decline in soil quality: the content of micro-macro elements is 10-30 times lower than the minimum threshold. Today, a number of farms are trying to find a solution on their own, but after analyzing the soil, they do not know what measures to take. There is a need to develop a complex set of measures for each soil type so that it is possible to restore soil fertility without damaging the cultivation process, and in the case of pastures and grasslands, the biodiversity as well.
Losses due to natural disasters for all beneficiary provinces	As a result of climate change and the irregular exploitation of the country's natural resources over the years, a situation has arisen in which the volume of rural food losses is increasing every year due to climate disasters. The only difference is that every year the type of disaster changes: early spring frosts, droughts, hail. However, surveys show that hail does the most damage. The damage caused by hail is the greatest and this risk is present every year in Lori and Shirak provinces. Those most affected are the potato, grain fields, and perennial plantations. Agricultural insurance introduced in Armenia is a cost compensation, which alleviates the situation but does not provide a solution if there is hail in the region every year. It should be taken into account that heavy hail damages the hayfields, but there is no compensation for the damage to that resource. There is a need to introduce modern anti-hail protection systems, which will reduce the risk of hail and compensate for the remaining risks through agricultural insurance.
Problems related to the introduced agricultural	The agricultural insurance system introduced in Armenia has a number of problems making farmers skeptical about the use of this toolkit. The most important ones among them are:

insurance and lack of awareness	1. Low level of farmers' awareness of the activities, principles, and insurance function of the "Agricultural Insurance" system. Insurance is denied due to a lack of information. The numbers of agricultural insurance contracts signed in 2021 speak about that. In 2021, 1482 contracts were signed in the Lori province, and 64 contracts in the Tavush province. (Source: Report of the Government of Armenia, 2022) 2. Lack of a monitoring system over agricultural insurance companies. No control over the implementation of the process is in place today. 3. Farmers' vulnerability at the level of cooperation with the insurance company.
Irrational use of cooperative resources.	Improperly established one-man governed cooperatives, serving the interests of certain persons and not fulfilling the main purpose, with a number of problems lead to the underestimation and disregard of the idea of cooperation. Particularly large shortcomings and negative feedback are related to the pasture user cooperatives, most of which are inactive or solely managed. Currently, the coutry has about 499 agricultural cooperatives and consumer cooperatives operating in the agricultural sector and having different agricultural orentations, of wich 82 (16.4%) are agricultural cooperatives and 417 (83.6) are consumer cooperatives[51] . Today, this resource is used at 30% of its capacity, as that percentage of registered cooperatives operate. This should also be considered a waste of available resources. There is a need to develop a new approach to re-equipping, diversifying, transforming existing cooperatives, and start using the existing resources properly.
The gap in specialized agricultural consulting	In all provinces, in all enlarged communities, and all villages, the lack of specialized agricultural advice is a priority. There is a great demand for greenhouse specialists, agronomists, plant protectors, fruit growers, veterinarians and stockbreeders. • Lack of professional knowledge and the absence of a consultant hinder the introduction of new crops by the farmers, just as they refuse to cultivate high-value crops without finding a solution to the problems encountered during cultivation. • Incorrect, incomplete consultations lead to doubling the cultivation costs and the low quality of the yield.
Lack of 3rd quality raw material procurement and processing units	Only the first and partially second quality fruits and vegetables are procured in the regions. No units for procurement and processing of 3rd quality raw materials are in place in Shirak and Lori provinces. There are several small productions in the Tavush region, but no processing of such agricultural products is available in any of the Berd region villages. The third-quality raw material is completely defective, while it makes up 10-25% of the total crop by the product.
Problems of cooperation	One of the issues raised during the meeting with the processors is the symbolic connection of cooperation with the Chamber of Commerce and Industry, which is not cooperation, but more of a demonstrative nature. Small

[51] https://www.mineconomy.am/en/page/1331

between the processors and the Chamber of Commerce and Industry	industries have no direct contact with this structure, and so therefore are not aware of its functions. There is a need to review the cooperation and work approaches of the Chamber of Commerce and Industry. Develop a clear strategic plan and work in that direction.

Armenia is only self-sufficient in the production of a few of its agricultural products. It is highly dependent on imports, especially for grain, potatoes, carrots, beets, and a number of other food products of great importance. The three beneficiary provinces, Lori, Shirak, and Tavush, are very diverse in their agricultural production, but due to the proper organization of production and the reduction of food losses, they can ensure a stable volume of agricultural production. To this end, it is necessary to support the reduction of losses at all stages of the agricultural food value chain.

7.1.2 CONCLUSIONS FOR EXPORT:

The export of goods and services of Armenia has moderately high contribution to its GDP. In 2020, the share of export of goods and services as percentage of its GDP was *29.8%*, as stated by the World Bank, 2022. The share of food products in trade, as stated by the Government of Armenia, in terms of export volume in 2020 was *24.51%*. The Netherlands, in the same year, recorded the export of goods and services as percentage of its GDP *77.9%*.

Armenia pursues liberal foreign trade policies. It is a member of WTO and a member of Eurasian Economic Union. Access to Armenian markets of goods is liberal in terms of official border and behind-the-border arrangements. Tariffs are low by international standards.

Armenia has established export promotion strategy. The Chamber of Commerce and Industry of Armenia with its established representatives in 9 countries is responsible for conducting export promotion activities. In addition, there are three business platforms, namely Business Support Office, Enterprise European Network Armenia, and Access2markets, that provide support to exporting companies. Despite it, there is a need to increase the efficiency of export promotion activities, to enforce more intensive cooperation between government, businesses, education, research and extension and to focus the efforts especially on building strong 'Made in Armenia' brand.

The export infrastructure improvements are as well taking place. The Government of Armenia has introduced one stop one window principle to easy export procedures. The ferry transportation of goods is expected to function starting from the end of June 2022, as an alternative to road transportation. There are 12 logistic centers in Armenia, 9 out of 12 in Yerevan, 1 in Abovyan, 1 in Ashtarak, and one in Akunk village. However, there is no centralized storage, cooling/freezing facilities where the export products of SME can all be collected.

The Export Insurance Agency ICJSC of Armenia insures Armenian resident companies against the risk of nonpayment of foreign buyers. Insured companies are able to obtain Bank credits. The Ministry of Economics is fully authorized to manage 100% packages of state owned shares of ICJSC Export. In spite of it, there is still a need to create more possibilities for obtaining export credit/export funds.

The logistic Performance Index (LPI) of Armenia, the indicator of the quality of country's trade and transport related infrastructure (1 = low to 5 = high) in 2018 was equal to *2.61*. Thus, there is a place for improvements.

The main bottlenecks named by exporters are low price competitiveness, not established Brand name 'Made in Armenia, especially in EU market. Accordingly, limited trust level. Limited sources and support to obtain market intelligence information, limited access to export credit, lack of centralized storage, cooling and freezing facilities, and difficulty to meet standardization requirements of importing countries.

Further bottlenecks based on literature and on producers statements are summarized in **Table 25**.

TABLE 25 EXPORT BOTTLENECKS

Level	Bottlenecks
Producers, SMEs, other Exporters	*Producers* – small production quantities, – low productivity, spoilage and loss during post-harvest handling and transportation, – lack of knowledge about potential export market opportunities, – lack of knowledge about foreign markets requirements, – lack of knowledge about export market product quality requirements, – lack of knowledge about for export responsible institutions, – lack of knowledge about export procedures and necessary documents. *SME and other Exporters* – difficulty to obtain for export necessary product quantities of required quality, – high transaction costs, often high logistic costs related to product collection and transportation, – especially high costs of refrigerated transportation (e.g. fresh fruits and vegetables), – poor rural infrastructure – not optimal market linkages between the producers, processors or exporters – lack of specially for export centralized storage capacity, – limited possibilities to obtain export credit or other financial means
External Environment and Export Policy	– Armenia's export ways especially in respect to large-scale export rely mainly on road transportation *Note:* *In case of delayed cargo transportation, spoilage and lose of especially perishable goods, fresh fruits and vegetables, occurs* *The government is currently implementing the measure aimed at transportation of goods by ferry (ferries)* *The Government of Armenia at the border has already introduced the principle of one stop - one window*

	– Moderate quality of countries trade and transport related infrastructure – Moderate efficiency of existing export promotion, export related infrastructure, export finance

Source: *Own Presentation*

7.2 RECOMMENDATIONS

The analysis and relevant recommendations are carried out according to the supply chain approach. The following recommendations will provide a reduction of food loss and waste at each stage of the value chain. The following is the role that Government, Donors, and local NGOs can play in the implementation of these recommendations.

7.2.1 RECOMMENDATIONS FOR PRODUCERS

Production

Recommendation	Possible actions/interventions	**Role of**		
		Government and/ institutional bodies	International Donor organizations, Embassies	Local NGOs, Foundations and other organizations
Soil quality restoration.	• Ensuring access to field research, proper quality of the testing of laboratory samples, and accessibility. • Application of mobile, portable laboratories. • Prediction of potential pollution risks by analyzing the results of soil testings, and recommending measures to improve soil quality. • Promote the use of complex fertilizers, reduce the volume of nitrogen unilateral fertilization. • Train regional specialists,	• Legislative regulation of soil quality protection - implementation of fertile layer control. • Update of the RA agrochemical maps by provinces.	Support the establishment of demonstration farms to present: • Operation of mobile soil-water analysis laboratories. • Experimental application of complex fertilizers and presentation of results. • Training of local specialists. • Presentation of the expertise in this field.	• Provide professional advice to regional specialists and farmers on the potential of different components of soil quality and the negative impact of their deficiency. • Develop simple guidelines: on the restoration of soil macro-micro elements, providing fertilization schedules. • Raise awareness on modern complex fertilizers, type and composition of extra-root fertilizers, application. • Experiment with examples of different crops in demonstration

	cooperative members, and other active groups on land quality control, improvement, up-to-date fertilization methods, compounds and technologies through ToT programs.			farms, demonstrate results through practical and theoretical training, and raise farmers' awareness.
Land consolidation on the principle of joint/cooperative cultivation.	Consolidation of neighboring lands under the condition of protection of property rights through joint cultivation on an area of 5-20 hectares. Such as, • Joint cultivation of adjacent orchards and vineyards. • Planting new orchards and vineyards on adjacent plots as one unit. Application of a single irrigation system, rational land use, proper human resource management, proper orchard placement, and establishment. Offer a large quantity of high-quality fruit to the exporter, and processor. • Co-cultivation of cereals and potatoes, application of crop rotation. Establishment of cooperatives based on the principle of joint cultivation.	• Develop short-term plans to promote joint land cultivation, establishment of new consolidated orchards and vineyards. • Develop short-term support programs to consolidate the joint consolidated crop of potatoes and cereals.	• Support the implementation of joint land development demonstration programs. • Promote the introduction of technologies for the rational use and improvement of natural resources such as land, and water, in such projects.	Propose programs to donor organizations and to the state: • 5-20 hectare land consolidation models for the establishment and joint cultivation of orchards and vineyards. • Land consolidation models for 50-100 ha area on grain crops, potato cultivation, crop rotation, and joint storage, consumption. • Try to introduce such demonstration models in the definition of existing or newly established cooperatives, and present the results in other provinces.

	To unite the adjacent 50-100 hectares of land in the cooperative, introducing a single rotation scheme for that area, joint cultivation and joint sale of the crop.			
Strengthening cooperatives, rational use of agricultural machinery, specialists, equipment and resources of these units.	• Development of new business plans for existing cooperatives in the beneficiary provinces, diversification of activities, introduction of new management models. • Establishment of new cooperatives in the beneficiary provinces, offering food storage, processing, or refining services. • Equipping cooperatives with new equipment to reduce the cultivation costs and crop losses.	• Defining the law on cooperatives, by-laws to promote more flexible cooperation of coopertives in the tax field. • Development of cooperative support subsidy programs.	• Support the implementation of programs for modernization of existing cooperatives, diversification of activities. • Contribute to the establishment of new cooperatives in the beneficiary provinces to reduce food losses, such as refrigerated food storage, processing, post-harvest sorting, seed purification, etc. • Support the organization of mutual visits to familiarize with the international experience.	• Develop models for donors to rationalize the potential of existing cooperatives, increase work efficiency, and strengthen capacity. Introduce these models through demonstration programs and promote the idea. • Propose programs for cooperative management, strengthening the potential of specialists, which will contribute to the activation of the activities of cooperatives in the region and the restoration of the very idea of cooperation. • Develop and propose models for new cooperatives providing food loss reduction services in the beneficiary regions.
The mapping of perennial plantations will allow making accurate predictions about the fertilizers	• Digitize and map information on perennial land plots; • Refine agro-climatic zoning methodology, taking into account the forecast of climate change	With the introduction of high-tech technologies, including drone systems, satellite imagery, GIS systems, implement a real-time update of cadastral maps and make new mapping.	Assist in testing demonstration examples, digitize information on agricultural land on the example of one or more enlarged communities.	• Establish an electronic platform to provide local authorities with appropriate information. • Experiment with the example of one or more enlarged communities as a demo model and inform other communities.

needed for cultivation, the expected harvest, and reduce losses.	and physiological data of plants. • Create an electronic platform for agro-climatic maps and the established methodology.			• Teach and introduce the advantages of implementing such systems, application features.
Upgrading Infrastructure on Hydrometeorology Atmospheric Phenomena: Defining Enlarged Communities.	Provide a toolkit for raising awareness of farmers and access to information in each enlarged community: placement of information boards, climate information platform, etc. • Increase the number of meteorological stations to reduce the error rate. • Connect modern aeronautical stations installed in demonstration farms to the general system to "receive information" from those stations. • In each village municipality, install "Hydro-aeronautics and atmospheric phenomena boards/screens" that will be attached online to the general system so that they can see weather forecasts in their village.	• Ensure cooperation with the MES systems, possible cooperation with hydro-nuclear stations, for receiving information. • Installation of "Hydro-aeronautical" boards/screens "in large communities will help improve the quality of agricultural insurance.	Assist in the implementation of infrastructure modernization programs related to hydrometeorology and atmospheric phenomena. Contributing to: • Application of climate change mitigation measures. • Defining the correct harvest and sowing dates. • Raising awareness of expected climate risks.	Develop and suggest programs through specialists • Raising public awareness on hydropower and atmospheric phenomena through electronic boards. • Conduct ToT training in large communities on the proper use of the information obtained from similar platforms. • Introduction of tools for determining the correct timing of grain, potato and other crop harvesting, sowing and other cultivation functions.

Improving climate disaster mitigation systems, providing protection, warnings, effective measures and access to environmentally friendly agricultural products.	• Improving the agricultural insurance system, raising awareness. • Introduction of modern anti-hail protection systems. • Improving access to environmentally friendly agricultural products, knowledge of these pesticides and fertilizers.	• Introduction of agricultural insurance packages for strawberries, raspberries and other berries. • Introduction of agricultural insurance packages for damage from strong winds and hail for greenhouses and smart farms. • Introduction of monitoring system over agricultural insurance companies. There is no control over the implementation of the process today.	Support for programs to mitigate the damage of natural disasters and increase farmers' knowledge in this field.	• Awareness of farmers on the details of the introduced agricultural insurance process, farmer's rights and responsibilities. • Work with agro-product importers, awareness of new fertilizers, ecologically harmless preparations. Promote the import and use of organic, biological medicines.
Introduction of modern agricultural machinery, upgrading of combine harvesters, failure of used equipment with more than 40 tons of wear and tear to reduce emissions.	• Replenishment of a new batch of harvesters, updating of existing equipment. In the case of overcrowded combines, they do more harm than good. • Establishment of mobile technical inspection stations for agricultural equipment. This will allow conducting on-site inspections of large-scale agricultural machinery.	• Compulsory technical inspection of agricultural equipment. • Define normative legal acts, rules, standards and technical norms, through which to prevent the operation of obsolete equipment. • Development of subsidy programs for large communities for the purchase of harvesting machines.	• Support for demonstration and experimental programs. • Introduction to international experience. • Organizing reciprocal visits.	• Development and implementation of programs for the operation of rural machinery, the introduction of modern equipment and experimental crops. • Preparation and implementation of training courses for mechanization specialists. • Study of modern agricultural equipment necessary for the Republic of Armenia, presentation of models.

	• Introduction of equipment used in modern orchards and vineyards. • Strengthening the capacity of cooperatives by adding new couplings for existing equipment. • Supply of necessary harvesting and sowing techniques for communities specializing in potato, carrot, beet cultivation.			• Organizing reciprocal visits for mechanics to countries with extensive experience.
Implementation of local seed breeding and seed quality improvement measures for cereals and potatoes.	• Promotion of local secondary seed production. • Strengthen the capacity of existing seed farms to maintain and improve seed quality. • Capacity building of cooperatives: Equipping with seed purification and sorting equipment.	• Development of state support programs, customs clearance privileges for import of super elite-elite seeds, planting material. Through such measures, the quality of the seed material imported to Armenia will be indirectly improved, which will be reflected in a chain effect on the yield of those crops.	• Support for the establishment of demonstration farms, seed farms. • Supporting cooperation with leading international seed farms. • Support capacity-building programs for existing seed farms.	• Elaboration of business model development programs for seed farms; • Development of contract farming model implementation programs for seed farms. • Strengthening professional knowledge and capacity of seed farms. • Establishment of seed cooperatives, development of capacity-building programs.
Agricultural consultation, accessibility and quality improvement.	Accepting the enlarged community as a starting point in the beneficiary regions, implement the following for the enlarged community:	Develop state support programs with the Ministry of Education to train rural youth specialists.	• Supporting programs for training agricultural specialists and increasing the agricultural knowledge of young people.	• Development and implementation of training courses for farmer consultants. • Compile specific guidelines according to the nature of the main production chains of the

	• Improving the quality of agricultural consulting. • Training of regional specialists. • Involvement of young people in the establishment of demonstration farms. • Implementation of special extra time courses related to agricultural innovations in high schools.		• Support for farmers' qualification-training courses for farmer-consultants.	enlarged community and the required professional advice, where farmers will find the information they need. Make this guide available online to all members of the larger community.
Introduction of pasture, grassland, forage soil quality, and vegetation improvement systems.	• Reduce the wider use specific load of highland pastures and; • Encourage the cultivation of irrigated, waterless perennial legumes to form a stable fodder base and reduce overgrazing. • Experiment and suggest sowing new grass mixtures widely used in international practice, which are several times more caloric than alfalfa. • Introduce anti-erosion, soil protection, agro-	• Set a clear fine for early spring (after snowmelt) and late fall grazing. • Prohibit leasing of areas contaminated with poisonous grasses, rocky, degraded areas and implement improvement works with state funds. • Provide pastures for use, provided the tenant commits to improving those areas. • Organize and carry out inventory, passporting to describe the actual	• Support the presentation of demonstration models to improve the quality of soil, pastures, grasslands, meadows. • Introduction of international experience. • Training of local specialists.	• Develop programs with professionals on a demonstration basis. Programs should promote: • Develop field feed production to mitigate the harmful effects of the overcrowded and unsystematic operation of natural forage areas. • In the areas of aquaculture, in the field of crop rotation, a large place should be given to the circulation of annual, perennial cereals, butterfly-flowered fodder crops. • To develop and implement a set of agro-measures in the form of superficial and radical improvements for the

	technical, as well as phyto-ameliorative measures to maintain and increase the fertility of cultivated lands, as well as the efficient use of moisture. • Create all favorable conditions for the organization of the term operation of remote pastures, as well as for the management of timing and methods of operation of natural feeding areas of community importance.	condition of natural forages, meadows.		maintenance and improvement of vegetation in the meadows. • Propose plans and models for the establishment of protective forest layers, which will mitigate the negative impact of land reclamation, wind erosion, drought. • Development of effective pasture rental and management programs.
Application of modern agro-technical measures in the cultivation of traditional valuable crops.	• Establishment of perennial plantations - selection of the right type and varietal composition. • Application of modern agricultural technologies. • Cost optimization and farm coordination mechanisms. • Schemes of the correct application of agricultural products	• Propose seed production of valuable local varieties and types, planting material breeding through state subsidy programs. • Rehabilitate irrigation systems in widespread crops by subsidizing large communities.	• Facilitate the study of large communities to enjoy valuable, promising crops; provide modern technologies for their cultivation. • Implementation of demonstration programs: presentation of various soil cultivation equipment, mills, no-till sowing machines, on modernization of harvest and cultivation, reduction of expenses.	It is necessary to develop programs for the introduction of valuable traditional crops, which will include: • Application of modern agro-technical technologies. • Cost optimization and farm coordination mechanisms. • Schemes of the correct application of agricultural products. • Introduction of water-saving systems.

	• Introduction of water-saving systems. • Research and use of drought-resistant and heat-resistant varieties and hybrids, especially local varieties.			• Presentation of drought-resistant and heat-resistant varieties. • Development of cultivation guidelines/methodologies to ensure access to this information on online platforms.
Supporting the beekeeping sector as a highly profitable one, an effective business model for women and youth involvement.	• Support the development of organic and traditional beekeeping. • Facilitate the provision of affordable laboratory quality control services for bee products. • Establishment of beekeeping cooperatives, where only women and young people can be involved. • Equip with the necessary equipment for squeezing and storing honey, making a candle.	• Development of a state subsidy program to support the development of beekeeping. • SSFS should promote the provision of affordable laboratory control services for the quality control of bee products in the regions.	To support the introduction of innovative approaches to beekeeping and the implementation of programs that promote the development of this sector.	• Introduction of innovative approaches to beekeeping, development of programs. • Preparation of programs for collective beekeeping and beekeepers' cooperatives. • Implementation of training programs for beekeepers . • Development of business models for making different types of honey, beeswax and production of other products and introduction in the form of experimental models.

Post-Harvest Storage

Recommendation	Possible actions/interventions	Role of		
		Government and/ institutional bodies	International Donor organizations	local NGOs and Foundations
Establishment of post-harvest sorting, refining and storage units for cereals	• Establishment of units for grain sorting and refining services, which can also be done by upgrading cooperatives • Establishment of grain storage units, which will reduce the sale of grain directly from the field. Conservation will provide additional income • Establishment of seed purification units in parallel with secondary seed farms • Establishment of pea, green pea, lentil sorting and storage units	Development of short-term state support programs for the establishment of postharvest storage, refining, sorting units and micro-enterprises carrying out grain storage.	To support the establishment of demonstration models of small business units carrying out postharvest grain storage, sorting and refining	• Development of business plans for small business unit implementing the postharvest storage, sorting and refinement of cereal crops, • Presentation of these business models within demonstration farms and cooperatives. • Implementation of training courses on the main provisions of grain crop storage.
Establishment of food storage facilities for potatoes, carrots and beets in Shirak province.	• Establishment of refrigeration facilities for food storage of potatoes, carrots, beets through the establishment of marketing groups or the establishment of cooperatives providing similar services. • Introduction of modern tuber sorting and washing equipment • Practical training of working groups to work with similar refrigerators.	Development of short-term state support programs for refrigerated storage units for tubers for the procurement of raw materials and equipment.	• Support the establishment of demonstration units for refrigerated fruit storage facilities . • Introduction of European experience and training of local specialists.	• Development of business plans for small business units implementing the refrigerated storage of food potatoes, carrots, beets. • Establishment of demonstration models of refrigerated vegetable storage and the publication of results. • Implementation of training courses on

				postharvest storage of similar crops.
Promotion of fruit and berry storage refrigerators, fast cooling units in Lori and Tavush provinces.	• Establishment of refrigeration units for **short-term** storage of wild fruits, berries and greens. • Establishment of refrigeration units for **long-term** storage of subtropical fruits: pineapple, pomegranate, figs. • Training of fruit and vegetable preservation specialists in all beneficiary regions. • Equipping existing refrigerators with modern equipment. • Establishment of procurement points for refrigeration storage services through marketing groups or cooperatives.	Development of short-term state support programs for the storage of fruits, vegetables, berries and other agricultural raw materials: • Establishment of refrigeration facilities. • Equipment upgrades. • Provision of raw materials for storage.	Support: • Establishment of demonstration units for fruit and berry storage refrigerators. • Introduction to international experience. • Introduction of modern equipment.	• Training on post-harvest storage and sorting. • Organizations of reciprocal visits in the Republic of Armenia. • Professional experience exchange visits to EU and neighboring countries. • Training of specialists in the operation of modern refrigerators.

Processing

Recommendation	Possible actions/interventions	**Role of**		
		Government and/ institutional bodies	International Donor organizations	local NGOs and Foundations
Establishment of small processing units for procurement of third-quality fruit: promotion of juices, canned food, jams and other productions.	• Establishment of below-average, third- quality fruit procurement and canning units. • Promotion of small business units using cold juice production equipment. • Establishment of women's cooperatives for the production of jams and confitures.	Free training courses for small processing enterprises supported by the state and the SSFS on the Inspectorate standards, criteria and basic requirements.	• Facilitate the formation of small business units for the procurement and processing of third-quality raw materials. • Support the establishment of small demonstration	• Development of business plans for the establishment and diversification of small processing enterprises. • Contract farming, investment in purchasing quality raw materials. • Establishment of

	• Establishment of small business units for the production of fruit vodka.		productions. • Upgrading existing small businesses with new equipment.	demonstration units, presentation of best practices. • Reciprocal visits to similar productions in Armenia. • Facilitation of new businesses to participate in agro markets, to present their products in supermarket chains. • Compilation of methodological manuals on technological processes. • Implementation of small business accounting courses.
Promotion of third-quality potato processing products: flour, chips, etc.	• Establishment of low-quality potato procurement and processing units • Establishment of small business units for the production of baby food and semi-finished potato products			
Promotion of third-quality potato processing products: flour, chips, etc.	• Establishment of low-quality potato procurement and processing units • Establishment of small business units for the production of baby food and semi-finished potato products			
Equipment modernization at the level of small business, family business and cooperatives.	To support the introduction of a number of equipment for the diversification of products at the level of operating small businesses, family businesses, cooperatives • Rapid cooling systems • Canning • Introduction of Tetra pack systems	Compilation of SME support packages for milk procurement and milk processing: • Equipment, • For the procurement of raw materials	To support the establishment of demonstration farms	
Increase in milk procurement through the establishment of new procurement points and the re-equipment of existing small and medium-sized processing facilities.	• Equipping with various production equipment of dairy products. • Establishment of milk collection points in remote pastures. • Establishment of specialized milk transfer units by refrigeration machines, service units. Equipping with diversification equipment for sour cream, cottage cheese and other dairy products.	Compilation of SME support packages for milk procurement and milk processing: • Equipment, For the procurement of raw materials.	To support the establishment of demonstration farms.	

Packaging

Recommendation	Possible actions/interventions	**Role of**		
		Government and/ institutional bodies	International Donor organizations	local NGOs and Foundations
Equipping with packaging equipment.		Compilation of SME support packages for the necessary equipment purchase.	• Support the establishment of demonstration farms. • Contribute to the introduction of international experience. • Training of experts in the field of packaging.	• Support the packaging and labeling of small pilot productions, new products. • Facilitation of new businesses to participate in agro markets, to present their products in supermarket chains

7.2.2 RECOMMENDATIONS FOR EXPORT

General Recommendations:

- To look for alternative transportation ways to the road transport – (*ferry transportation service measure is on the process of implementation by the government of Armenia, see above*).
- To focus the export on processed products, especially products made from unique local varieties, such as grape and apricot
- To implement better export promotion, improve export related infrastructure, export finance to link SME (small scale) to multinationals. *(Learned from best practice examples – Sub-chapter – Best Practice Examples).*

Particularly

In export promotion:

As shown in best practice examples different types and combinations of export promotion agencies and strategies can be beneficial

1. Following the experience of Netherlands, Germany, Denmark, and Spain Armenia will benefit by bringing together all relevant stakeholders, e.g. ministries, other public actors, business organizations, etc., to develop and implement a joint export promotion and branding of Armenian products, particularly agricultural and food products. The particular role of private businesses in trade need to be recognized, the public private partnerships can be more intensively build while implementing export promotion activities following the example of Netherlands.

   Following the experience of Netherlands, Germany and Spain, the wider network of agencies such as embassies and consulates overseas and development cooperation can more intensively be integrated in export promotion activities and open the door for businesses

2. German experience of GTAI, the provision of market intelligence service, shows a good example how to support to SME or other exporters.
3. The experience of Netherlands shows how to put emphasis on the role of Government as a business facilitator, to effectively developing public private partnerships and to integrate private businesses in implementing export promoting policies and international investment strategies.
4. Following the experience of Netherlands to integrate businesses together with governmental institutions to monitor the food safety and quality, to ensure market access requirements.
5. To intensify the participation in fairs, ensuring permanent presence of Armenian exporters.
6. The Czech experience of export-promotion agency shows how to improve the exporters' ability by providing combined marketing, research and training activities.

In export infrastructure:

7. Following the experience of the Netherlands Armenia can establish centralized storage

facilities near export points, as well as cooling/freezing facilities.

8. The intensive integration of digital technologies following the example of Netherlands, Germany, Denmark and Spain will give Armenian exporters the possibility to efficiently use the time and sell on competitive price (using auctions), will support companies internalization, will benefit from participation in digitalized trainings.

In export finance:

9. Learning from experience of Netherlands, Germany, Denmark, Spain, and Italy, Armenia can adopt diversity of models, public sector for export credit guarantees, partnership with private sector, support from business, for providing the possibilities of obtaining export credit and export funding

TABLE 26 SUMMARY OF RECOMMENDED INTERVENTIONS OF DIFFERENT STAKEHOLDERS

Role of		
Government and Governmental Institutions	International Donor Organizations	Local NGOs
– Increase international competitiveness, by supporting export priority sector development/ subsidies/ other governmental programs – Invest in exporting industries and technology acquisition – Attract foreign investments by creating favorable regulatory framework – Act as business facilitator – Build public private partnerships to share the cost, Co-finance option for exporters– Conduct export promotion focused on Branding – Build public, private partnerships – Provide regular Funding/ co funding for participation in Foreign Trade Fairs– Organize trade fairs – Provide export credit guaranty funds/actions – Provide market intelligence service provision – Support the integration of digital technologies in trade/auction organization – Integrate wider network of agencies such as embassies and consulates overseas and development cooperation – Support cooperation between government, businesses, education, research and extension – Combine export promotion and invest in activities	– Fund export readiness raising programs – Fund digital technology integration programs – Fund for export meant infrastructure storage, cooling/freezing development programs – Fund export insurance development programs, consult the governmental agencies and private agencies – Fund programs for export platform/ counselors network building programs	– Build skills by providing trainings on trade, food safety and quality, identification of potential sales oportunities – Do advocacy for building – Build trade alliances – Provide trade microcredits – Provide co funding for technology acquisition in export priority sectors – Build partnerships between NGOs and businesses – Facilitate combined marketing, research and training activities – Develop export/trade risk assessment tools, provide trainings

LIST OF LITERATURE:

Avetisyan S. (2010), *Agriculture and Food Processing in Armenia.* Limush Publishing House

Community Finance Officers Association (CFOA). 2003. Armenian Country Paper, Land Policy.

Tbilisi: South Caucasus Regional Land Policy Conference.

Customs Code of Republic of Armenia (accessed 05.03.2022): *http://www.parliament.am/legislation.php?ID=1208&lang=eng&sel=show*

FAO 2013: *Food Losses and Waste in Armenia Country Report. Prepared by Vardan Urutyan*

Food Systems Summit (2021): *National Pathway for Food Systems Transformation in Support of the 2030 Agenda,* The Republic of Armenia

Henri Lahtinen and Heikki Rannikko (2018): Best practices on national export promotion activities

Import and Export Regime (accessed 05.03.2022): *https://investinarmenia.am/en/import-and-export-regime*

Lerman, Z., and A. Mirzakhanian. (2001). Private Agriculture in Armenia, Lexington Books,Lanham

OECD (2015): *Private Sector Development Policy Handbook. Connecting Armenian SMEs to global value chains.* The case of agribusiness.

Paul Ingenbleek, Peer Ederer, Joy Christensen (2007): *Flora Holland Flower Auctions* - A Dutch Merger in the Face of Globalization

Peter van der Knaap (2021): Trading interests and values Evaluation of the international trade and investment policy of the Netherlands

Siemen van Berkum (2017): Export promotion: the Dutch approach Policies supporting participation in global value chains: IAMO Forum 2017, Eurasian Food Economy between Globalisation and Geopolitics, 21-23 June 2017, Halle (Saale), Germany

Spoor, 2004: Land reform, poverty and inequality, A pro-poor approach to land policies, UNDP

Armenia White Paper.

World Bank Group (2015): Export-Led Industrial Development Strategy: Implementation Review and Recommendations on New Toolset. Republic of Armenia

Agri-Product Exporters' Toolkit http://www.isc.am› media › 2020/12/21

https://www.rvo.nl/: one-stop shop of public support for international business (as cited by Siemen van Berkum)

www.agroberichtenbuitenland.nl: monthly reports of all counsellors' activities (as cited by Siemen van Berkum)

www.nvwa.nl: Netherland Food and Consumer Product Safety Authority: supervision, risk assessment and risk communication regarding food safety, health and animal welfare requirements. Main task wrt imports, also provides export certificates (as cited by Siemen van Berkum)

www.een.ec.europa.eu/about/branches: Enterprise Europe Network (EEN) is a Programme of the EC for partner search in international trade, innovation/research and technological cooperation (as cited by Siemen van Berkum)

www.iob-evaluatie.nl: an independent policy evaluation service under the Ministry of Foreign Affairs, frequently evaluating NL export promoting instruments (as cited by Siemen van Berkum)

https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?locations=NL
https://oec.world/en/profile/country/arm#:~:text=In%202020%20Armenia%20imported%20%244.47,to%20%244.47B%20in%202020 (accessed May 3, 2022)

https://oec.world/en/profile/country/arm?flowSelector1 (accessed April 13, 2022)

https://www.trade.gov/country-commercial-guides/armenia-agriculture. Last published 2021-09-16 (accessed May 3, 2022)

https://d-nb.info/1126647934/34

https://wits.worldbank.org/CountryProfile/en/Country/NLD/Year/2019/Summary (accessed on April 2022).

https://www.petekamutner.am/Content.aspx?itn=csCICustomsWarehouses

https://www.trade.gov/country-commercial-guides/armenia-agriculture, last published date:2021-09-16 (accessed March 25)

https://wits.worldbank.org/CountryProfile/en/Country/NLD/Year/2019/Summary (accessed 1 April 2022)

https://www.ecoglobe.com/ (accessed May 07, 2022)

https://www.arlis.am/DocumentView.aspx?docid=74433 (accessed 6 April 2022)

www.armcci.am (accessed 12 April 2022)

https://lpi.worldbank.org/ (accessed May 07, 2022)

https://data.worldbank.org/indicator/LP.LPI.ITRN.XQ?locations=AM (accessed May 07, 2022)

https://www.aravot.am/2022/03/25/1255878/ (accessed May 13, 2022)

https://www.panorama.am/am/news/ (accessed May 19, 2022)

http://www.eia.am/en/ (accessed June 15, 2022)

ANNEX 1 LIST OF THE PARTICIPANTS IN GROUP DISCUSSIONS IN THE MARZPETARANS OF TAVUSH, LORI AND SHIRAK MARZES

Name/Surname	Field of work	E-mail	Phone number
Shirak Munecipality, Group discussion 29.03.2022 Gyumry			
Albert Ayvazyan	RA Shirak Deputy Governor		091236114
Artak Khachatryan	Ann. GKNM adm. Head of Shirak department	artak.khachatryan69@mail.ru	091013541
Roman Hamayakyan	Head of the Department of Agriculture and Nature Protection of Shirak Marzpetaran	romhamayakyan@mail.ru	098000434
Andranik Nalbandyan	Head of Agriculture Department	andnalband@mail.ru	094343590
Arayik Harutyunyan	Chief Advisor to the Shirak Division of the RA Ministry of Foreign Affairs	ara.harutyunyan1978@mail.ru	093200251
Hrant Torosyan	Chief Specialist of the Agricultural Department of the RA Shirak Marzpetaran	hrant.torosyan.84@mail.ru	077445459
Aram Vardzelyan	Chief Specialist of the RA Department of Agriculture	aram.vardzelyan@inbox.ru	043893043
Lori Munecipality, Group discussion 31.03.2022 Gyumry			
Arus Tumanyan	Lori Marzpetaran Agriculture և Department of Nature Protection	39051153@e-citizen.am	093669871
Samvel Markosyan	Lori Marzpetaran Land Development Department		077729698
Nazar Manukyan	Lori Marzpetaran Land Development Department		094910820
Tavush Munecipality, Group discussion 01.04.2022 Gyumry			

Arkadi Amirkhanyan	Department of Agriculture and Nature Protection		093425356
Zaramyil Mardanyan	GKHNMV Department of Tavush	zarmayilmardanyan@gmail.com	094469607
Garik Melqonyan	Department of Development Plans, Tourism և Analysis	garikmelkonyan83@icloud.com	094006062
Artsrun Nazaryan	Land Management and Land Use Department	nartsrun@rambler.ru	094005598
Serine Mirzoyan	Land Management and Land Use Department	serinemirzoyan1989@gmail.com	094336464
Vagharshak Suqoyan	Department of Agriculture and Nature Protection		077771007
Grigor Paytyan	Department of Agriculture and Nature Protection	tavush.gyugh@mta.gov.am	094332281

ANNEX 2 LIST OF PROCESSORS PARTICIPATING IN GROUP DISCUSSIONS IN TARGET MARZES

Name/Surname	Region / Community:	Field of work	Phone number
Shirak Processors, Group discussion 29.03.2022 Gyumry			
Norayr Mkrtchyan	Shirak region/Saratak	Voghji Administrative Manager, Milk Processing	093326622
Gurgen Yeghoyan	Shirak region/ Amasia	Shirak Agrarian-Peasant Unit NGO	094823861
Seyran Yervandyan	Shirak region/Bayandur	Agricultural processing	098794878
Martin Sargsyan	Shirak region / Mets Sariar	Beekeeping, agricultural processing	098196296
Koryun Sumbulyan	Shirak region / Bavra	Buckwheat processing	077505017
Gor Petrosyan	Shirak region / Meghrashen	Import of cereals, potato seeds	093999972
Gagik Gevorgyan	Shirak region / Hacik	Agriculture /seed breeding	094840660
Jemma Harutyunyan	Shirak region/Amasia	seed breeding	094001203
Artur Manukyan	Shirak region/Amasia	Head of community	098055040
Artem Davtyan	Shirak region/Amasia	Gy.hod.ogt.Head of Department:	094247477
Artavazd Ghukasyan	Shirak region/Amasia	potato seed producer	093829047
Artsrun Igityan	Shirak region/Akhuryan	seed breeding	098823010
Vardan Ikilikjan	Shirak region/Akhuryan	seed breeding	094655655
Levon Kondyan	Shirak region/Ashocq	potato seed importer	
Artash Manukyan	Shirak region/Ashocq	Deputy Mayor, seed breading	094824619
Artak Gevorgyan	Shirak region/Ani	seed breeding	093700079/ 093880030
Martiros Darbinjan	Shirak region/Ani	Head of community	077751234
Vardan	Shirak region/Artik	cereals seed breeding	093353638
Ashot Paskevichyan	Shirak region/Artik	Head of Agriculture Department	093747224

Gyulvard Sahakyan	Shirak region/Artik	Chief Specialist of the Agricultural Department	094927528
Lori Processors, Group discussion 31.03.2022 Gyumry			
Edmon Hovhannisyan	Lori region/Saramej	seed production	098113028
Narek Nalbandyan	Lori region/Kurtan	Farmer / micro-greens production	055130800
Edgar Hovhannisyan	Lori region/Saramej	Farmer / micro-greens production	093303097
Sasun Asatryan	Lori region/Spitak	Director of Agroholding LLC	094400881
Aleqsandr Ghukasyan	Lori region/Hobardzi	Milk processing	093874477
Tigran Nalbandyan	Lori region/Kurtan	Farmer, cheese production	094402325
Miqayel Alaverdyan	Lori region/Hobardzi	Farmer / micro-greens production	098656768
Narek Abrahamyan	Lori region/Shenavan	Beekeeping	041616162
Hmayak Sargsyan	Lori region/Shenavan	Beekeeping	055284290
Sasun Goshyan	Lori region/Vanadzor	Director of Fammafood LLC	055620575
Armen Niazyan	Lori region/Aqori	reseller,	098762214
Arsen Maghaqyan	Lori region/Tumanyan	reseller,	093881532
Hamlet Niazyan	Lori region/Alaverdi	Gardener	043595700
Eduard Mnacakanyan	Lori region/Shahumyan	Processing	077251165
Hovhannes Fidanyan	Lori region/Vanadzor	Gardener, fruot processor	093226977
Vardan Vardanyan	Lori region/Gogaran	Milk processing	093580758
Garik Manukyan	Lori region/Vanadzor	Milk processing	093440320
Tavush Processors, Group discussion 01.04.2022 Gyumry			
Vardges Petikyan	Tavush region/Haxtanak	Reseller,	094953020
Gagik Aghabekyan	Tavush region/Koxb	Director of "Green Village LLC" processing enterprise	098763765
Artur Khachatryan	Tavush region/Aygehovit	Private enterprise, fruit storage, processing, refrigeration, dryer	094995195
Garegin Khachikyan	Tavush region/Koti	Nursery, fruit growing	093233282
Gagik Evanesyan	Tavush region/Koti	Gardening	094030907

Hajk Xulijanyan	Tavush region/Noyemberyan	Recycling, Refrigeration	093189009
Ararat Gevorgyan	Tavush region/Ijevan	<<Araspel>> JV Marketing activity	093781090
Emma Hakwbyan	Tavush region/Gandzaqar	Consumer group of "Emulik" milk producers LLC	077469607

ANNEX 3 LIST OF COOPERATIVES PARTICIPATING IN GROUP DISCUSSIONS IN TARGET MARZES

Name/Surname	Region / Community:	Field of work	Phone number
Shirak Cooperatives and farmers, Group discussion 29.03.2022 Gyumry			
Gevorg Varosyan	Shirak region / Mayisyan	Agriculture	098979649
Hermine Gevorgyan	Shirak region / Mayisyan	Agriculture	098743533
Arestak Petrosyan	Shirak region / Meghrashen	Agriculture, cooperative member	098999914
Aristakes Chashoyan	Shirak region / Aygabac	Agriculture	094927380
Samvel Voshkanyan	Shirak region / Voxji, Haykavan	Processor	098643271
Seyran Voskanyan	Shirak region/Azatan	Agriculture, cooperative member	098184888
Ara Sergoyan	Shirak region/Akhuryan	Agriculture	093359699
Ashot Paskevichyan	Shirak region/Artik	Head of Agriculture Department	093747224
Mkrtich Sahradyan	Shirak region/Artik	Cooperative member	077772102
Torosyan Artyom	Shirak region/Artik	Cooperative member	098565606
Sergey Aleqyan	Shirak region/Artik	First class specialist of the Department of Agriculture and Environment	093123010
Lori Cooperatives and farmers, Group discussion 31.03.2022 Gyumry			
Merujan Gharibyan	Lori region/Getavan	Farmer	099313555
Gegham Karapetyan	Lori region/Saramej	Farmer	094602622
Edmon Hovhannisyan	Lori region/Saramej	Farmer	098113028
Hmayak Harutyunyan	Lori region/Kurtan	Cooperative member	099221187
Narek Nalbandyan	Lori region/Kurtan	Farmer	055130800

Anush Sargsyan	Lori region/Debed	President of "Dzori hask" cooperative	098128779
Edgar Hovhannisyan	Lori region/Saramej	Farmer	093303097
Valter Martirosyan	Lori region/Vahagni	Chairman of WMOFS Cooperative	093695071
Misha Ohanyan	Lori region/Vahagni	Member of WMOFS Cooperative	077531718
Fyodor Sahakyan	Lori region/Vahagni	Member of WMOFS Cooperative	098019176
Vachik Qochinyan	Lori region/Vahagni	Member of WMOFS Cooperative	077977663
Aleqsandr Ghukasyan	Lori region/Hobardzi	Farmer	093874477
Tigran Nalbandyan	Lori region/Kurtan	Farmer	094402325
Mkhitar Mkhitaryan	Lori region/Shenavan	Cooperative member / farmer	077570757
Vahe Nalbandyan	Lori region/Kurtan	Cooperative member / farmer	095123200
Alvard Davoyan	Lori region/Gyulagarak	Healthy food cooperative	094779435
Martik Virabyan	Lori region/Lernancq	cooperative	093727761
Arsen Harutyunyan	Lori region/Lernancq	cooperative	077288158
Tavush Cooperatives and farmers, Group discussion 01.04.2022 Gyumry			
Vanik Abrahamyan	Tavush region/Aygedzor	Fruit growing	077475624
Vanik Voskanyan	Tavush region/Chinar	Gardening	093228027
Gexayr Zurnachyan	Tavush region/Haxtanak	Cooperative member	093353734
Xoren Aslanyan	Tavush region/Berdavan	farmer	095303996
Vardan Zurabyan	Tavush region/Berdavan	Cooperative member	077280728
Mher Nigoyan	Tavush region/Navur	Cooperative member	094877609
Hayrik Khazaryan	Tavush region/V.Tsaxkevan	Chairman of the "Agricultural	098616400

		Development" Cooperative	
Gor Abrahamyan	Tavush region/Norashen	Chairman of "Tavsho Hatik" Agricultural Cooperative	077888038
Feliqs Meliqyan	Tavush region/Koti	Chairman of "Border Farmer" Cooperative	093779070
Gagik Evanesyan	Tavush region/Koti	Gardening	094030907
Rafik Ohanyan	Tavush region/Ptghavan	Ptghavan agric. consum. » coop president	094570757

ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ REPUBLIC OF ARMENIA

ԱԶԳԱՆՈՒՆԸ

ՄԻՆԱՍՅԱՆ

ԱՆՈՒՆԸ

ՀԱՅԿ ՌՈԲԵՐՏԻ

ՍԵՌԸ
Ա

ՔԱՂԱՔԱՑԻՈՒԹՅՈՒՆԸ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ

ԾՆՎԵԼ Է
16.10.1952

ԾՆՆԴԱՎԱՅՐԸ
ՎՐԱՍՏԱՆ

ՏՐՎԵԼ Է
03.11.2023

ՎԱՎԵՐԱԿԱՆ Է ՄԻՆՉԵՎ
03.11.2033

ՈՒԺ ԿՈՂՄԻՑ
001

ԱՆՁՆԱԳԻՐ ՏԻՐՈՋ ՍՏՈՐԱԳՐՈՒԹՅՈՒՆԸ/SIGNATURE OF HOLDER

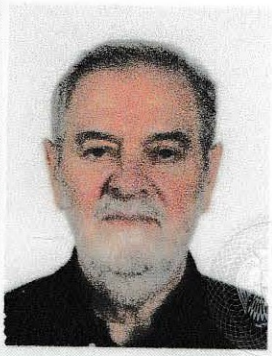
ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ REPUBLIC OF ARMENIA

PASSPORT

TYPE
P

COUNTRY CODE
ARM

PASSPORT No
AL0490948



SURNAME(S)
MINASSIAN

NAME
HAYK

NATIONALITY REPUBLIC OF ARMENIA

DATE OF BIRTH
16 OCT 1952

PERSONAL No.

SEX
M

PLACE OF BIRTH
GEORGIA

DATE OF ISSUE
03 NOV 2023

DATE OF EXPIRY
03 NOV 2033

AUTHORITY
001

P<ARMMINASSIAN<<HAYK<<<<<<<<<<<<<<<<<<<<<<<<

AL04909481ARM5210161M3311031<<<<<<<<<<<<<<06

ԱՆՁՆԱԳԻՐԸ ՕՏԱՐԵՐԿՐՅԱ
ՊԵՏՈՒԹՅՈՒՆՆԵՐՈՒՄ
ՎԱՎԵՐԱԿԱՆ Է ՄԻՆՉԵՎ.

THIS PASSPORT IS VALID FOR FOREIGN
COUNTRIES UNTIL:

06. 11. 2024

ՆՇՈՒՄՆԵՐ · OBSERVATIONS

Հաշվառված է Գ. Երևան 001
Գյուլբենկյան փ. շ. 40, բն 18
11 07 2009թ.
ստորագրություն

AL 0430948

Գերմանական
համագործակցություն
DEUTSCHE ZUSAMMENARBEIT

Implemented by:
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Fodder production demo village – improvement of natural fodder areas and reactivation of non-cultivated arable lands

PROGRESS REPORT
Final

Organization Name or Expert Name	“Shen” NGO
Reporting Period	01.11.2022 to 26.04.2024
Responsible for Reporting	Project coordinator - Nvard Shahmuradyan
Submission Date	03.05.2024

Table of Content

Executive summary

Introduction

According to the 4th National Communication on Climate Change national communication report, the following predictions are forecast for Armenia:

- 4-10% reduction of the total area of pastures and their productivity by 2030
- 7-10% reduction in grass yield capacity, which will lead to reductions in the volume of fodder production
- An estimated 24% of decline in productivity of irrigable lands
- Deterioration (degradation) of agricultural lands and pastures
- Extreme weather and climate change will impact the crops and yield capacity reducing it by 8-14% by 2030

During past years a result of careless exploitation of pastures and hay meadows, the amount of hay/fodder obtained per unit area has dropped sharply, it has decreased by at least 30% (e.g., from hay meadows instead of getting 100 bale/ha, farmers get 60 bale/ha).

In addition to the low volume of hay produced, the low calorific value of the hay produced is also an issue. This is also one of the reasons why hay meadows are grazed instead of being harvested. There is a need to offer up-to-date, affordable ways of improving pastures and grasslands to farmers so that they can improve leased grasslands and pastures themselves.

Non-cultivated arable lands are mainly used as hay meadows or pastures, which has decreased the quality of the soil, plant varieties, and biomass, and this causes the risk of spreading weeds and poisonous plants. This results in the degradation of soil as well as loss of biodiversity and natural resources.

According to the data of the RA Ministry of Economy, 50% of RA arable land and 70% of pastures are not used. There are many reasons for non-use or non-purposeful use of land, but two of the dominant problems are land fragmentation and lack of irrigation.

In order to increase the ratio of targeted land use, the Government of Armenia has approved a program according to which the Government will support land consolidation throughout Armenia during 2023-2025. Its aim is to create larger farms, reduce the cost of crops, and also reduce uncultivated land, ensuring the country's food security. Also, in that program, it is planned that in the case of 30-100 and 100-200 hectares, the costs will be partially reimbursed if a water basin is built or land reclamation is carried out. In the case of 30-100 hectares, there should be at least 10 plots of land to be combined, in the case of 100-200 hectares - 20. In addition to making the change from non-irrigated to irrigated category free of charge, the Government is also ready to reimburse up to 50 % of the reservoir construction costs.

According to the RA Government's decision "On approving the concept and program of measures for increasing the efficiency of agricultural land use", the Government aims to reduce the area of unused arable land to 25% by 2030[1].

The development of agricultural cooperatives is one of the strategic tasks of the government, and the current policy adopted and implemented by the state fully reflects this. Cooperatives create an opportunity to effectively address issues, such as the fragmentation and small size of the agricultural land plots, limited

[1] https://www.arlis.am/DocumentView.aspx?DocID=138498

resources and inadequacy of infrastructure, lack of access to quality agro-inputs and specialized agronomic services, difficulties with the production cycle, supply chains, and marketing, among other issues.

Taking into account the priorities listed above, **"Fodder production demo village – improvement of natural fodder areas and reactivation of non-cultivated arable lands"** measure was implemented by Shen NGO. The measure supported in the framework of "ECOserve" programme, commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH .

Within the framework of the measure, new approaches and concepts have been tested in Balak settlement of Syunik region. The measure supports the cooperative's use of new local seed varieties, advanced cultivation technologies, and equipment, and will become a hub for production, processing, and service provision for farmers. This allows for improved fodder production, decreased pressure on pastures, improved agrobiodiversity, and creation of new economic opportunities for the cooperative and for the local farmers.

The promotion of local varieties is important also from a climate adaptation perspective. The promotion of local varieties with capacity building on appropriate practices serves as a nature-based solution to increase the adaptive capacities and resilience of communities.

Problem statement

Syunik region in the Soviet period had huge potential for fodder and crop seeds production, there were a lot of so-called demo plots, that were very much suitable for cultivation crops, and fodder for seed production. Nowadays some private organizations work on the production of seeds. But they use secondary seeds production, i.e. they buy high-quality seeds and sell the first and second generations in the local market. Meanwhile, the production of those generations is relatively low, and farmers do not have good harvest of crops or hay from those seeds.

In the past, in Syunik the local population of sainfoin called "Sisianian local" was cultivated, and until now this variety of sainfoin is registered in the governmental list of allowed and valuable varieties of fodder crop. It is important to mention that this variety is used for hybrid production of new varieties in the Caucasus. Nowadays the Armenian Government, or seed importers buy hybrids that are created from the "Sisianian local" varieties abroad. The level of local production of this variety is very low and endangered, but it is very valuable in terms of local agrobiodiversity and conservation of local varieties from an economic point of view. Due to the war in Ukraine, Armenia faces a large problem importing any types of seeds. So local production of seeds can be one of the most important strategies for the Armenian Government, which can also contribute to Food Security among others.

Balak Settlement Description: The project will be implemented in Balak settlement in Sisian consolidated community of Syunik region. Balak settlement has 174 households. The settlement is located at an altitude of 1700 m above sea level. Animal husbandry, grain crops production and small amount of potato production are mainly developed. Balak settlement has 524 ha of arable lands, from which 86 ha private, other community-owned: 220 ha arable lands are rented by the villagers, other 218 ha of arable lands not used for their purposes, used as pasture or cutting for hay. Settlement has 180 ha of pastures and 34 ha of hay meadows.

In Armenia, there are many valuable barley varieties obtained through local selection, which are intended for obtaining malt for beer production. Today, there are 2 hydroponic fodder production units established in Shaghat (nearby Balak) and Shaqi settlements, which import barley seeds from the Russian Federation because only food-grade barley is grown in the region. Hydroponic fodder production is an innovative solution to get more fresh, green fodder even in the winter period and ensure enough feed for animals. The problem is that

there is a big gap between producers, suppliers, scientific centers, and seed farms. Today, based on the social situation and considering the co-financing component of state support, most farmers buy barley seed imported from abroad for a low cost, when they can sow local varieties and find a much better market for their product. There is a need to develop local seed production, to mediate cooperation between existing cooperatives and seed farms.

Proposed solution

The purpose of the measure is to use effective replicable methods for the rehabilitation of natural fodder areas and decrease pressure on pastures by cultivating unused arable lands for fodder production. Ensuring sustainability by using high-value local varieties of seeds for fodder production and ensuring agrobiodiversity conservation, climate adaptation, and income.

The measure included complex pilot areas using different methodologies for improvement. In the framework of the measure, **123 ha of land** has been rehabilitated and/or improved in the community, out of which: 20 ha pastures, 20 ha hay meadows, 83 ha arable lands.

The main aim of "The Balak Village Seed Produser and Pasture Users Association" Cooperative is to ensure sustainable pasture management and create additional fodder for the cooperative members and for the villagers to decrease pressure on the pastures.

The cooperative provided agriculture machinery services such as ploughing, sowing, hay cutting, raking, and baling. Attempts at secondary seed production of cereals have been made in the past by some members of the cooperative. However, with the support of this program, they plan to make seed production the main direction alongside fodder production. Cooperative has 25 mambers.

"The Balak Village Seed Produser and Pasture Users Association" Balakfor the "first time" implemented several steps and methods for the arable land, pasture and hay meadow rehabilitation:

- 20 ha of pastures has been leased from Sisian enlarged community for the period of at least 3 years and cleaned from stones,
- 20 ha of hay meadows has been leased from Sisian enlarged community for the period of at least 3 years,
- Extra-root fertilizer has been used/sprayed in pastures and hay meadows to help the nutrients to be absorbed from the leaves and stems of the plants,
- Non-grazing has been ensured for at least one year (cooperative informed the villagers and local administration that these areas will be not grazed, and the cooperative controled the process),
- Arable lands have been improved (52 ha leased by farmers and 31 ha leased by the cooperative). Arable lands have been improved through cultivation of sainfoin, barley, and alfalfa local varieties to ensure additional income for the farmers and the cooperative.

The measure allows the cooperative and the 25 member farmers to produce not only fodder from the 83 ha of arable lands, but also fodder seeds (sainfoin, barley, alfalfa). Fodder seeds will help to extend fodder production in Balak and nearby communities, ensuring improvement and use of arable lands that are not cultivated or used for their purpose. The measure also helps to reduce the pressure on pastures and natural fodder areas. With the support of the cooperative, 31.3 tons barley seeds were produced in the settlement in 2023.

This measure served as a continuation of the **"Fodder Production and Pasture Improvement as COVID-19 Response Measure"** implemented by Shen NGO with the support of ECOserve programme of GIZ commissioned by BMZ in 2021-2022. Based on the experiences of the latter, some modifications and lessons learned have been applied here such as:

- Using local varieties of seeds instead of importing
- Cultivating the soil starting from autumn with combination of methods (ploughing, cultivation, tilling)
- Early spring sowing
- Capacity building of local farmers and local specialist (agronomist) in terms of better use and management of natural recourses
- Leasing of pastures and hay meadows by the cooperative, the objectives of which include ensuring better management of the natural fodder areas (described in the bylaw of the cooperative)
- Income generation from adding value from fodder to seed production and forage making

1. Implementation

1.1. Implementation Progress and Changes

The measure has been implemented according to the presented schedule and action plan. The team has invested all its resources and capacities to ensure proper implementation of the measure.

The actions taken and the results obtained are presented below.

Task	Achieved outputs	Description
Task 1: Improvement of arable land of farmers by using local fodder seeds	52 ha of arable lands are improved by BalakBalak Cooperative	In the framework of the project, 52 ha of arable land was improved and used for its intended purpose. Local varieties and seeds were exclusively used for cultivation. The seed supply was carried out by the Gyumri Selection Station.
Task 2: Improvement community-owned arable lands, that will leased by cooperative, by using local fodder seeds	31 ha of arable lands improved by Balak Cooperative	31 ha of community-owned arable land was leased and cultivated by the cooperative. The lease was carried out for 5 years. Barley and sainfoin were sown on leased lands.[2]
Task 3: Rehabilitation of community-owned pastures by the Cooperative	20 ha of pastures are rehabilitated by Balak Cooperative	A community-owned 20 ha pasture was leased by the cooperative for 5 years and improved, using extra-root fertilization, stone collection and controlling of grazing.
Task 4: Rehabilitation of community-owned hay meadows by the Cooperative	20 ha of hay meadows are rehabilitated by Balak Cooperative	A community-owned 20 ha meadows was leased by the cooperative for 5 years and improved, using extra-root fertilization.
Task 5: Creation of fodder base	Fodder base created on 83 ha, which consists: 46 ha sainfoin 35 ha of barley 2 ha alfalfa	A fodder base was formed as a result of the cultivation Sowings 2022-2023: 83 hectare of land were sown by the cooperative: 46 ha sainfoin, 35 ha barley and 2 ha alfalfa Sowings 2024: 103 hectare of land were sown by the cooperative: 52 ha sainfoin,

[2] Sainfoin - Sisian local, Barley - Nutans 115 varieties.

		31 ha barley, 7 ha alfalfa, 3 ha oat, 10 ha of triticum diccocum.
Task 5: Implementation of seed production of valuable local forage crop species	Production of valuable local forage crop species seed production was implemented in 83 ha	Balakk cooperative cultivated lands for seed production of fodder crops. For this purpose, 83 ha was sown only with locally valuable fodder crops. "Sisianian local" variety of sainfoin, "Nutans 115" variety of barley and "Aparan – 1" variety of blue alfalfa.
Task 6: Seeds refining facility will ensure high-value forage seeds production and selling (cooperative and farmers ensure that they will produce and sell seeds jointly for at least 5 years)	Over the next 5 years since 2024, the cooperative will implement seed production. Accordingly supplying the following quantities of seed for 5years • 14,700 kg of sainfoin seeds • 2.000 kg of alfalfa seeds • 56.000 kg of barley seeds	It is expected, that within the next 5 years, the BalakBalak cooperative will produce barley, sainfoin and alfalfa seeds. In 2023, the cooperative produced 31,300 kg of barley seeds. In 2024, the cooperative produced • 34.000 kg barley seeds • 10.800 kg Triticum dicoccum seeds • 500 kg alfaalfa seeds The production of seeds from sainfoin and alfalfa fields will start from 2025.
Task 7: Farmers and the cooperative will ensure additional income from the cultivation of fodder.	306,000 AMD income per farmer • 21,430,000 AMD income for cooperative • 671,154 AMD income per farmer	During 2023, 324.400 AMD income per farmer was received During 2024, 918.760 AMD income per farmer was received.[3]
Task 8: Part of income from the community-owned lands the cooperative will use for pasture improvement activities, for pasture road rehabilitation, for sowing of the degraded pastures, etc.	Shen signed an agreement with the cooperative, which states that starting from 2nd year until 4th year cooperative have to use 20% from net income for natural fodder areas development, rehabilitation, improvement of pasture infrastructure.	During 2022-2023, the cooperative, with its investment and Shen's support, was cleared of thorns and poisonous plants, more than 40 ha of pasture and hay meadows were fertilized with extra-root fertilizer. No grazing was allowed in that area.
Task 9: Fodder mill will be used to ensure preparation of hay, straw and in the future of fodder pellets production that will be also valuable and high-quality forage for feeding of animal, ensuring increase of milk and meat productivity	At least 1000 bales of straw and combined feed (2023) At least 6,000 bales of straw of hay and combined feed (2024)	2023data - In total, the cooperative received 2100 bales of straw. (On average, 1 ha yielded 60 bales of straw) 2024 data - 3080 bales of straw from spring sows - - 16100 bales of combined feed from sainfoin sows. - 1420 bales from alfalfa sows.
Task 10: Training of SHEN specialists and regional officials on modern technologies for the restoration of pastures and grasslands.	Trained main and regional staff	04-05.08.23 two-day course on "Modern technologies for improving and monitoring pastures and grasslands" was held for the retraining of the Shen NGO

[3] some of the seeds will be sold in the spring of 2025

		staff. Training was conducted by G.Tovmasyan.
Shen NGO and Cooperative investment side activities		
Task 11: Provision of agricultural equipment for cultivation of arable land	Provision of agricultural equipment to strengthen cooperatives	The mechanization portfolio of the Balak cooperative has been supplemented with new equipment: a tiller, a suspended sprayer and a cultivator.
Task 12: Provision of a seed refining equipment and fodder mill	Provision of agricultural equipment to strengthen the cooperative's seed production capacity	Balak cooperative's resources have been improved with equipment needed for seed production and feed production: a seed refining equipment and a fodder mill.
Task 13 Implementation of theoretical and practical trainings on crop cultivation and pasture rehabilitation.	Beneficiaries with increased knowledge on seed production and pasture rehabilitation.	During 2022-2023, 7 seminars were held for 25 members of the cooperative and other farmers of Balak settlement. 129 people participated in the seminars.

1.2. Calculations of the actual and expected income received by the beneficiaries

Harvesting of barley started from August 11, 2023. Overall 31,500 kg of barley seeds was produced from which 23,300 kg of barley seeds are marketable and could be sold as seeds.

Summarizing, we can say that the cooperative received the 2023 spring sowing:

Figures	Product quantity,	Unit price	Expected income, AMD
Barley seed of first reproduction	31,500 kg	200	6.300.000
Barley for fodder	8,200 kg	100	820.000
Bales of straw from barley seeds	2100	500	1.050.000
Total			8.170.000
On average, the income received per member of the cooperative is			325.200

Data of 2024 sowing:

In 2024, the cooperative cultivated a total of 103 ha of land, which includes the 2023 autumn and 2024 spring sowings. In 2024, the cooperative cultivated 20 ha more arable land compared to the previous year.

Figures	Sowing area, ha	Purpose of production
Sowing done on the cooperative members' own lands		
Sainfoin sowings 2023	25	For feed and sees production,
Barley sowings	25	For the seed production (as continuation of our demo project using seeds that produced in Balak)
Alfaalfa for fodder	7	3ha is 2024 spring sowing, for feed production
Sainfoin	6	2024 first year sowing, For feed production
Triticum dicoccum	4	to be sold for food purposes
sowing done on the land leased by the cooperative		

Sainfoin sowings 2023	21	For feed and sees production,
Barley sowings	6	For the seed production, An elite seed has been sown- Nutans 115
Triticum dicoccum	6	For the seed production. An elite seed has been sown
Oat sowing	3	for feed production
Total	103	

It is important to note that, in the spring of 2024, the cooperative implemented seed sorting and fodder grinding services:

- performed 11.000 kg seed sorting (7000 kg for other farmers and 4000 kg for cooperative members)
- 1500 kg of grain and about 500 bales of combined feed were ground (milled)

In 2024, the cooperative got a good harvest, part of which was stored and the other part was sold. The table shows in detail the sowings and the harvests obtained and the corresponding income.

Figures	Sowing area, ha	Product quantity,	Unit price (price 2024)	Expected income, AMD
Sainfoin sowings 2023 (for seed and feed production)	46	0	0	
Barley sowings (For feed production)	25	32.000 kg	100	3.200.000
Barley sowings (For the seed production)	6	9.000 kg	200	1.800.000
Alfaalfa for fodder (2024 spring sowing, for feed production)	3	0	0	
Sainfoin (2024 first year sowing, For feed production)	6	0	0	
Oat sowing (for feed production)	3	4.500 kg	90	405.000
Triticum dicoccum (to be sold for food purposes)	4	5.200 kg	100	520.000
Triticum dicoccum (For the seed production)	6	10.800 kg	300	3.240.000
Bailes for fodder from sainfoin sowings	46 ha	16.100 bales	700	11.270.000
Bales for fodder from Alfalfa sowings	4ha	1.420 bales	700	994.000
Bales of straw from Barley, Oat,	44 ha	3.080 bales	500	1.540.000

Triticum dicoccum sowing	(31+3+4+6)			
Total				22.969.000
On average, the income received per member of the cooperative is				918.760

It is important to note that barley and beech seed among the mentioned products are stored and will be sold in the spring. In winter it will be filtered and bagged.
The members of the cooperative also generated a separate profit from the management of 20 hay meadows. This year, as a result of favorable climatic conditions and measures implemented in previous years, high-quality harvest was obtained from the meadows. An average, 160-180 bales of hay were harvested from 1 ha. The cooperative received about 3,200 bales of grass, the market value of which was 400 AMD/bale, making a profit of 1,280,000 AMD.

1.3. Conducted courses and trainings for the beneficiaries

During the project, the project experts in target Balak settlement, carried out 7 trainings. 129 farmers were trained. The thematic structure of trainings and the number of trained farmers is presented below.

Data	Type of training	Heading	N of participants	Female participants
24.02.23	Theoretical	"Features of seed production, care of crops: barley, alfalfa and sainfoin seed fields."	19	4
03.03.23	Theoretical	"Description of arable land, pasture, and grassland improvement technology,"	22	5
30.03.23	Practical	"Use of modern agricultural machinery, tillers, and other implements in sowing and harvesting grain crops"	16	7
06.04.23	Practical	"Varietal composition of provided seeds of barley, sainfoin, alfalfa, and their cultivation features." Researcher A. Harutyunyan from "Gyumri Breeding Station" CJSC as a trainer.	17	4
16.05.23	Theoretical	"Usage of modern foliar nutrition and weed control measures in grain and fodder crops".	20	9
25.05.23	Field visit	"Visit of the members of the Balak cooperative to the seed fields of the agricultural consumer cooperatives "Khor Virap" and "Ani Alek" of Ararat marz"	20	6
21.08.23	Practical	"Methodology for determining the right dates for harvesting of grain and fodder crops, harvesting and post-harvest works"	15	5
Total			129	40

A regional specialist was involved in the project by Shen. Young agronomist was selected from the Agrarian University branch in Sisian. During the measure, Shen's staff and the newly selected young regional specialist were trained. A detailed description is given below.

Data	Target	Training
01.03.23	Shen regional staff and new agronomist	Technology of improving arable land and pastures. Specifically the training was on the technologies provided by the measure for the cultivation of arable land, sainfoin, alfalfa, and barley, as well as the technology of improving pastures.
01.04-07.2023	Shen regional staff and new agronomist	Presentation of innovative cultivation technologies planned by the measure.

	Shen regional staff and new agronomist	The advantages of foliar nutrition and the differences in application methods.
	Shen regional staff and new agronomist	Features of seed cultivation: Barley, Sainfoin, Alfalfa.
04-05.08.23	Shen NGO staff	Two-day course "Modern technologies for improving and monitoring pastures and grasslands" was held in the training of the Shen NGO staff. Training was held by G.Tovmasyan

1.4. Implementation Challenges

Difficulties encountered during implementation

Description of the problem/obstacle	Actions implemented to mitigate the risk
Compliance with mandatory requirements for seed production on private arable land of cooperative members.	There was a fear that farmers would not sow on their private land as required for seed production. It was decided to mitigate that risk to sign an agreement form between beneficiary farmers and Shen. Farmers benefiting from the agreement guarantee to implement the cultivation of demonstration crops according to the planned methodology.
Difficulties in obtaining seeds from the Gyumri breeding station and obtaining documents justifying the uniqueness of that organization.	In order to have the documents confirming the uniqueness of the seeds produced by the Gyumri Breeding Station, it was necessary to contact the Ministry of Economy, because the Gyumri Breeding Station is subordinate to the Ministry of Economy. For this purpose, a meeting was held on 07.02.23 with Varsik Martirosyan, head of the Plant Breeding Department of the Ministry of Economy. The purpose of the meeting was to present the project once again, to discuss the cooperation with the Gyumri Breeding Station, as well as to learn more about the registration procedure and mandatory requirements for seed farms.
Frequent mandatory military musters related to border tensions made it difficult to work with the cooperative.	Most of the members of the cooperative were called to compulsory military service for 1-2 months, which made it difficult to coordinate the work. In order to be more flexible and to organize the work, the team involved more young specialists from the region. The regional agronomist has participated in all the activities of the cooperative and supported the all the implementation processes.

Force majeure difficulties

Description of the problem/obstacle	Actions implemented to address or mitigate the risk
Explicit requirement of three-phase electricity for the organization of the seeding process.	Negotiations related to the transmission of electricity to the manufacturing area and the subscription to high-voltage electricity, with the National Electric Power Company, the Sisian Consolidated community. As a result, they have submitted an application for a subsidiary and substation project/drawing. The cooperative made a payment for the installation of the substation in the amount of 1,065,000 drams. This investment is not included in the investment planned by Cooperative, but it has been implemented. According to preliminary data, the substation should be installed in September 2023 but it was installed in April 2024. As a result, feed grinding and seeding services were not performed in 2023.
Long-term blockade of the population of Artsakh and displacement of the population from Artsakh in September.	The unstable state of the country caused difficulties for the implementation of the activities planned. The border tension did not allow the members of the cooperative to be fully involved and cover more of the operations in the region. As a result, the

	harvesting was much more difficult. There was no coverage of the results of the measure, and there were no visits of farmers from neighbouring villages to the seed fields to see the activities of the cooperative within the region. In 2024, the website of the cooperative was created and circulated https://balaq.am/. All Balac Cooperative results are also covered on Shen's Facebook page and website.

1.5. Lessons Learned

During the implementation of the measure, the following lessons learned have come up, which should be taken into account when implementing similar measures:

- There is a need to increase the marketing skills of cooperative members. During the implementation of the measure, it became clear that with the increase in the volume of production, the members of the cooperative will need to use different marketing tools to attract a larger number of buyers. In 2024, Shen plans to conduct special marketing courses for the cooperative, as well as to create cooperation links with other structures engaged in seed production.
- Rejection of new technologies by farmers is mainly due to lack of knowledge and skills. They are willing to adopt a new approach or implement a new technology only after seeing it first-hand or hearing the opinion of another leading farmer. The presence of mechanizers, agricultural specialists, and other reputable farmers among the beneficiaries of the experimental plantings allowed to have many farmers involved and interested in participating in the measure. The direct beneficiaries of the project were the 25 members of the cooperative and the indirect beneficiaries were more than 100 households from the settlements of Balak, Shak, who used the services provided by the cooperative.

- During the seed sale process by the cooperative, it became clear that there is a great interest in quality Triticum dicoccum seed in the region. Considering this fact, it is planned to have a 5 ha Triticum dicoccum seed field by 2024. Shen plans to support the cooperative in purchasing Elite seed.
- We have tried to involve the representatives of the local self-government body, the active people of the village in all activities of the measure, to raise awareness about the measure, its objectives, and steps. During the implementation of the project, we were able to involve the local government, which directly supported the provision of production space and office of the cooperative for the cooperative free of charge. They assisted in the process of electrification of the production area.

1.6. Success Stories

The project has a number of achievements, which are unique not only from the perspective of this specific measure but also for the Republic of Armenia:The initiatives outlined present excellent examples of innovative land management and cooperative-based agricultural development. Here’s a breakdown of the key points:

1. **Land Consolidation via Leasing Community-Owned Arable Land:**

   This marks a step toward agriculture land consolidation via jointly land cultivation and and to increase agricultural efficiency.By bringing the community together for joint cultivation, the cooperative fosters collective responsibility, resource sharing, and maximizes land use.

   This model could serve as a reference for other communities looking to optimize underutilized or fragmented land. It also holds the potential to increase productivity and encourage social cohesion.

2. **Lease and Improvement of Communal Pastures and Hay Meadows**:

   Leasing communal pastures and meadows is crucial for improving pasture management and sustainability. The cooperative's efforts to improve these lands will provide long-term benefits by restoring soil health and potentially increasing fodder quality for livestock.

   This approach could result in a more sustainable livestock system, preventing overgrazing and ensuring the preservation of pastures for future use. In turn, it might reduce the strain on natural resources, improve biodiversity, and ensure higher productivity over time.

3. **Diversification of Pasture Users' Cooperative into Seed Production**:

   The cooperative's shift towards seed production and registration as an official seed producer introduces a new level of self-sufficiency and control over crop quality. This is a new approach to improve the operation of cooperatives and positioning of cooperative more embedding further into the agricultural value chain of primary production.

   This move positions the cooperative to influence agricultural practices, improve seed availability, and introduce better crop varieties. It not only enhances their economic potential but also supports surrounding farmers by providing local access to high-quality seeds.

Each of these initiatives has the potential to improve agricultural efficiency and sustainability, while also setting an example for other cooperatives and communities in RA.

2. Measures for Sustainability

The following factors have contributed to the effective implementation of the assignment and to the sustainability:

Actions aimed at the sustainability of technology use and further replication of results

- Shen NGO has regional offices in Syunik marz, who coordinated the regional work and regularly monitored current changes and developments.
- The young agronomist involved in the measure and the cooperative will continue the cooperation on own initiative. There is already an agreement that the agronomist will help the cooperative in monitoring and quality control of the fields.
- Shen NGO implements a number of projects in the beneficiary Marz.
- Over the next two years, Shen NGO will monitor the results of the measure. The best practices of this measure will be presented to the beneficiaries of other projects, thus raising awareness and increasing the possibility of replication.
- Strengthened cooperatives will continue their activities in the region as modernized service providers, carrying the knowledge on improvement process proposed by this measure.

Economic sustainability actions

- Balak cooperative increased its crops by 20 hectares in 2024
- In 2024, the cooperative initiated sainfoin seed cultivation on 6 ha
- In 2024, the cooperative produced: 9.000 kg of barley seeds, 10.000 kg of triticum dicoccum seeds and 500 kg alfaalfa seeds.
- In 2025, the cooperative will receive the first seeds of sainfoin and alfalfa. It is expected to receive about 3000-4000 kg of sainfoin and 1000 kg of alfalfa seeds this year. The price of 1 kg of alfalfa seed in the market is 2500 AMD, and the price of local sainfoin seed is 800-900 AMD/kg.

Ecological sustainability actions

- All the interventions of this measure have a strongly emphasized environmental approach. All the proposed measures and materials used in pasture fertilization, promotion of flowering, and extra-root nutrition are of biological origin, or such application technology is proposed where the risks of environmental pollution are minimized.
- Improving a pilot area of pastures in all three beneficiary Marzes and disseminating its success and lessons learnt on national level, will enable the replication of the pilot project and/or implementing larger-scale regional or national programs for ameliorating the overgrazed pastures and to consistently shift to scheduled pasture utilization schemes.

3. Conclusion and Recommendations

The summary of the results is carried out on the bases of analysis of the obtained results, the questions raised by the beneficiaries, the conclusions drawn as a result of the work with the Balak cooperative.

The Balak cooperative has made significant strides in its diversification into seed breeding, taking its first important steps in this field. Registered in the state licensing system, the cooperative is nearly fully equipped with the necessary tools and machinery to carry out both primary production and the seed production process.

Importantly, the Balak cooperative serves as a living example that rational arable land use and consolidated cultivation can be successfully implemented. Their ability to implement consolidated and effective community abandoned arable land improvement provides a valuable model for other communities.

Furthermore, the cooperative's approach to improving pastures and meadows is noteworthy and can be replicated in other settlements. The lessons learned and methods employed by Balaq can be applied in other Pasture User Cooperatives, those focused on pasture managementin various settlements.

Below are the summarized conclusions and recommendations.

3.1. Conclusions

The overall results of the measure are:

- Improved and cultivated land surfaces in 2023: 123 ha of agricultural land has improved, from which 20 ha of pastures, 20 ha of hay meadows, and 83 ha of arable lands
- Improved and cultivated land surfaces in 2024: 143 ha of agricultural land has improved, from which 20 ha of pastures, 20 ha of hay meadows, and 103 ha of arable lands
- 20 ha pastures has been rehabilitated by stone collection, extra root fertilization, and banning of grazing for 1 year
- 20 ha of hay meadows has been rehabilitated by using extra root fertilization
- 1033 ha of arable land has been improved by using local high-value fodder seeds, from which "Sisianian local" variety of sainfoin, "Nutans 115" variety of barley and "Aparan – 1" variety of alfalfa
- The Cooperative has been co-financed and with the support of Shen NGO received agricultural machinery, seeds refining, and fodder mill equipment
- In 2023 the cooperative and farmers harvested 31,500 kg of barley seeds and around 2100 bales of barley straw. The obtained harvest generally provides an income of 8.170.000 AMD, from which each member of the cooperative received 325.200 AMD income.
- In 2024 the cooperative and farmers harvested 41.000,500 kg of barley seeds, 4.500 kg of oat seeds, and around 3.080 of barley straw. The harvest of forage from sainfoin and alfa alfa sowings was 17.520 bailes. The obtained harvest generally provides an income of 22.969.000 AMD, from which each member of the cooperative received 918.760 AMD income.

Seed breeding of local, valuable grain and fodder crops is crucial for Syunik Marz and the entirety of Armenia, especially in light of food security concerns and increasing border tensions. These challenges have emphasized the importance of establishing resilient agricultural practices. The formation of a seed breeding unit within the Balak cooperative has allowed the region to optimize its resources and deliver reliable results with minimal investment.

In the course of the project, the need for pasture and hay meadow improvement was underscored. This was not only based on the observed decline in vegetation density and the limited species diversity but was further validated by detailed soil analysis. These findings highlight the necessity for sustainable land management practices to revitalize pastureland and ensure its long-term productivity, particularly in Armenia's rural and mountainous regions.The cooperative has shown that by working together, farmers can not only maximize the efficiency of their own land but also unlock opportunities through the leasing and purposeful use of community-owned land. With the right knowledge and equipment, the cooperative is positioned to advance into secondary seed production, providing an additional source of income for its members.

3.2. Recommendations

The recommended measures for improving pastures, arable lands, and secondary seed breeding aim to enhance agricultural productivity and sustainability in rural communities, especially in mountainous regions. Below is a structured analysis of the key points:

Support for Balak Cooperative:

1. **Continuous Training for Cooperative Members**:
    - Training on seed production processes will empower members with the knowledge needed to maintain quality and improve yield. Continuous learning is critical for adapting to new techniques and technologies.

2. **Exchange Visits to Experienced Seed Farms**:

    - Hands-on exposure to well-established seed farms will help cooperative members gain practical skills and insights, fostering better seed production practices.

3. **Facilitating New Connections for Seed Sales**:

    - Building market links for selling seeds is vital for the financial sustainability of the cooperative. Connecting with buyers will boost income and create long-term demand for locally produced seeds.

4. **Diversification of Seed Assortment**:

    - Diversifying the types of seeds produced will reduce risk and expand the market. Offering a variety of seeds (e.g., grains, vegetables, fodder crops) will cater to different farming needs, increasing relevance in the value chain.

5. **Contribute to the acquisition of modern equipment of seed storage:**

    - Modern seed storage equipment is essential for maintaining seed viability, protecting against pests, and ensuring optimal environmental conditions, such as humidity and temperature control. Proper storage extends the shelf life of seeds and ensures that high-quality seeds are available when needed.

    - By investing in both equipment and education, the cooperative can further improve its capacity for secondary seed production, safeguarding the quality of seeds and generating additional income.

This focus on modern technology and skills will not only enhance productivity but also ensure that the region becomes more self-sufficient and better prepared for agricultural challenges related to climate and food security.

2. Recommendations to the Government of Armenia:

A. Encouraging Land Leasing and Joint Cultivation:

- By promoting cooperative land leasing and joint cultivation, the government can restore arable land for its intended use. This will improve land productivity and bring abandoned or underutilized land back into agricultural use.

C. Involving Private Producers in Seed Breeding:

- Encouraging private producers to participate in seed breeding and quality seed production will strengthen the seed value chain. Cooperatives can consolidate land and follow the necessary protocols to meet seed production standards.
- The involvement of both private producers and cooperatives ensures that the value chain is strengthened at multiple levels.
- Development and implementation of leasing packages for seed breeders to purchase specialized equipment and harvesting machines.

C. Empowering Cooperatives for Secondary Seed Production:

- Equipping cooperatives with knowledge and the necessary tools for secondary seed production can open up new income streams. This ensures the availability of high-quality seeds and bolsters the local agricultural economy.

D. Encourage Leasing and Management of Pastures and Hay Meadows by cooperatives

- Promoting the leasing of nay meadows and pastures by cooperatives is a powerful strategy for enhancing the efficiency and sustainability of land use. By encouraging cooperatives to lease communal or underutilized meadows and pastures, land can be managed more effectively, with long-term improvements in mind. To ensure success, pasture improvement

projects should be implemented exclusively through cooperatives, which can utilize and further develop their collective resources.

- Policies should be developed to facilitate the leasing of communal lands to cooperatives, ensuring that legal frameworks and incentives are in place to promote participation.

E. Implementing Rotational Grazing, and Pasture Improvement:

- Encouraging cooperatives to adopt sustainable grazing practices by implementing subsidized projects for rotational grazing equipment can have transformative effects on pasture management. By providing tools like electric shepherd systems, utilizing agro-drones by sowing and fertilizing devices. This will not only improve pasture management quality but also promote long-term environmental sustainability, reduce soil degradation, and boost overall agricultural productivity.

Overall, the implementation of these recommendations will empower cooperatives, improve land management, and contribute to more sustainable and efficient agricultural practices. Through cooperative-based secondary seed production, diversified seed offerings, and improved pasture management, rural communities can increase their income and agricultural resilience.

These recommendations will enhance the management of pastures, and grasslands, making them more productive and sustainable. This is particularly relevant for mountainous regions, where effective land use is crucial.

4. Appendices

A1: List of GIZ Trainings Summary
A2: List of beneficiary farmers
A3: List of grain yield data obtained
A4: Arable land and pasture improvement technology
A5: Agenda and attendance sheets of all events carried out
A6: Pictures

ENVIRONMENT, CLIMATE,
OPPORTUNITIES
for people and nature

Management of natural resources and safeguarding of ecosystem services for sustainable rural development in the South Caucasus (ECOserve)

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH 59 Hanrapetutyan st., 9th floor
0010 Yerevan, Republic of Armenia
T +374 10 510065
I www.giz.de
http://biodivers-southcaucasus.org/

Քաղաքականության Փաստաթուղթ

Հայաստանի չմշակվող վարելահողերի արդյունավետ օգտագործման և նպատակային նշանակության վերականգնման քաղաքականության փաստաթուղթ

Նախաբան

Հողերի արդյունավետ օգտագործումը և վերականգնումը կարևոր նշանակություն ունեն Հայաստանի գյուղատնտեսության կայուն զարգացման, բնապահպանական կայունության և գյուղական համայնքների բարեկեցության համար: Տարիներ շարունակ հողային ռեսուրսների ոչ պատշաճ օգտագործումը, անապատացման գործընթացները և գյուղական բնակչության նվազումը հանգեցրել են վարելահողերի որակի անկման և մեծ թվով հողատարածքների լքման:

Համաձայն 2018 թվականի հողային հաշվեկշռի՝ գյուղատնտեսական նշանակության հողերը կազմում են 2044.5 հազ. հա, որից վարելահողերը՝ 445.6 հազ. հա: Սակայն, այս վարելահողերից մշակվել է միայն 242.8 հազ. հա կամ 54.5%-ը: Սա նշանակում է, որ վարելահողերի 45%-ից ավելին չի մշակվում: Այս խնդիրն ունի բազմաթիվ պատճառներ, մասնավորապես այն պայմանավորված է հողի մասնատվածությամբ, ոռոգման խնդիրներով, հողի բերրիության անկումով և գյուղական համայնքներից արտագաղթով:

Խնդիրների վերլուծություն

Հայաստանի գյուղատնտեսական ոլորտը բախվում է մի շարք մարտահրավերների, որոնք ազդում են հողերի արդյունավետ օգտագործման և գյուղական համայնքների զարգացման վրա: Ստորև ներկայացված են հիմնական խնդիրները՝ հիմնված հասանելի տվյալների և ուսումնասիրությունների վրա:

1. Անարդյունավետ մշակվող կամ չմշակվող վարելահողերի հիմնախնդիրը

Հայաստանում վարելահողերի զգալի մասը չի օգտագործվում նպատակային: Ըստ պաշտոնական տվյալների՝ վարելահողերի շուրջ 45%-ը չի մշակվում:[1]

Հիմնական պատճառներ՝

1. **Հողերի մասնատվածություն**

[1] https://hy.armradio.am/archives/333850

Հայաստանում հողային ռեսուրսների արդյունավետ կառավարումը լրջորեն տուժում է հողերի մասնատվածության հետևանքով: Սեփականաշնորհման գործընթացից հետո ձևավորված հողօգտագործման կառուցվածքը հանգեցրել է այն իրավիճակին, երբ մեծ թվով փոքրածավալ, տարածքային առումով մեկուսացված հողակտորներ չեն ապահովում տնտեսապես շահավետ գործունեության իրականացում: Բացի տեխնիկական և ինստիտուցիոնալ խնդիրներից, մասնատվածության պատճառով հողօգտագործողները հաճախ ունեն սահմանափակ տեսլական՝ հողը դիտելու որպես ռազմավարական ռեսուրս:

Հիմնական խնդիրներ՝

- Հողակտորների չափերի փոքրություն և տարածքային սփռվածություն, ինչը խոչընդոտում է ռացիոնալ ծրագրավորման և կառավարման հնարավորությունը:

- Արտադրության մասշտաբի տնտեսության բացակայություն՝ բերքի ինքնարժեքի բարձրացում և մրցունակության նվազում:

- Մեխանիզացիայի և տեխնոլոգիական լուծումների կիրառման սահմանափակումներ:

- Ջրաբաշխման, ճանապարհային և այլ ենթակառուցվածքների արդյունավետ օգտագործման անհնարինություն:

- Համագործակցության ցածր մակարդակ՝ պայմանավորված սեփականության բաշխման, վստահության և կազմակերպչական խնդիրներով:

- Ներդրումների նկատմամբ նվազ հետաքրքրվածություն՝ փոքր հողակտորների կողմից տնտեսական արդարացում չապահովելու պատճառով:

2. Ոռոգման համակարգերի անբավարարություն

Ըստ էկոնոմիկայի նախարարության տվյալների՝ փաստացի ոռոգելի տարածքները կազմում են շուրջ 117 հազար հեկտար, ինչը շատ փոքր թիվ է ընդհանուր գյուղատնտեսական նշանակության հողերի համեմատ:[2]

Հիմնական խնդիրներ՝

- Ոռոգման ենթակառուցվածքների մաշվածություն և ոչ բավարար վիճակ: Ոռոգման համակարգերի մեծ մասը պահանջում է արդիականացում:
  Հայաստանի ոռոգման համակարգերը ներառում են մոտ 17,000 կմ ջրագծեր և ջրանցքներ, որոնցից շուրջ 14,000 կմ-ը գտնվում է հողային պայմաններում: Այս

[2] https://hy.armradio.am/archives/333850

համակարգերի ավելի քան 70%-ը հնացած է, ինչը հանգեցնում է ջրի զգալի կորուստների՝ մինչև 40-50%:[3]

- Ջրային ռեսուրսների անարդյունավետ կառավարում: Ոռոգման ջրի կորուստները և անարդյունավետ բաշխումը նվազեցնում են ոռոգման արդյունավետությունը:

3. Հողի դեգրադացիա և աղակալում

ՀՀ-ում առկա է ավելի քան 24,000[4] հա աղակալված հողատարածք, որոնք այժմ դուրս են շրջանառությունից: Դրանց գերակշիռ մասը համայնքային սեփականություն է: Գյուղատնտեսական հողերի զգալի հատվածը ենթարկված է դեգրադացիայի տարբեր ձևերի՝ էրոզիա, աղակալում, բերրիության կորստի և կառուցվածքի խախտման ձևով: Հողերի դեգրադացիայի տարեկան տնտեսական վնասը Հայաստանում կազմում է շուրջ 111 միլիոն ԱՄՆ դոլար: [5] Դեգրադացիայի պատճառները բազմաշերտ են՝ ներառելով ինչպես բնական, այնպես էլ մարդածին գործոններ, որոնք փոխազդում են միմյանց հետ՝ խորացնելով հողի բերրիության նվազման գործընթացը:

Հիմնական խնդիրներ՝

- **Բնական գործոններ՝**
    - Ջրային և քամու էրոզիա՝ հատկապես լեռնային և լեռնահարթավայրային տարածքներում:
    - Երաշտների և տեղումների սեզոնային անբավարարության հետևանքով հողի խոնավության կտրուկ պակաս:
    - Սողանքային գոտիներում հողի կայունության կորուստ և ակտիվ սողանքային գործընթացներ:
- **Մարդածին գործոններ՝**
    - **Անարդյունավետ հողօգտագործման գործելակերպեր՝** ցանքաշրջանառության բացակայություն, չափից ավելի խորը մշակություն, հողերի միամշակաբույս գյուղատնտեսություն:
    - **Արոտավայրերի գերարածեցում**, ինչը հանգեցնում է բուսածածկույթի վերացման և հողի կառուցվածքի քայքայման:

[3] https://evnreport.com/magazine-issues/irrigating-efficiently/?utm_source=chatgpt.com

[4]https://www.panorama.am/am/news/2017/04/03/%D5%A1%D5%B2%D5%A1%D5%AF%D5%A1%D5%AC%D5%A1%D5%AE-%D5%B0%D5%B8%D5%B2/1755324?fb_comment_id=1312270745527242_1312279965526320/gallery/news/news/news

[5]https://documents1.worldbank.org/curated/en/099090523175040850/pdf/P17173815d072503018f461b8c8ded40056.pdf

- **Անտառահատված տարածքները**՝ դառնում են մերկ հողերի տարածման պատճառ՝ նպաստելով էրոզիային և հողի խոնավության կորստին: Անտառների հատումը խաթարում է բնական էկոհամակարգերը և բերում է մի շարք բացասական հետևանքների հողի որակի վրա: Երբ անտառապատ տարածքները մաքրվում են ծառերից, հողը մնում է անպաշտպան՝ ինչպես արևի ճառագայթներից, այնպես էլ քամու և տեղումների ազդեցությունից:

- **Խոզանի հրդեհման վտանգները**՝ շատ լուրջ են, հատկապես այն տարածքներում, որտեղ անտառահատում է տեղի ունեցել կամ բնական բուսականությունը խաթարված է: Խոզանի հրդեհը կարող է հանգեցնել անտառային հրդեհների, կենսաբազմազանության կորստի, հողի դեգրադացիայի, օդի աղտոտման, առողջական խնդիրների և գյուղատնտեսական ու նյութական մեծ վնասների:

- **Հանքարդյունաբերության ազդեցություն**՝ հողի մեխանիկական խաթարում, աղտոտում և էկոհամակարգերի ոչնչացում:

- **Աղակալում՝**

  - Ոռոգման և դրենաժային համակարգերի թերի կառավարումը հանգեցնում են հողում աղերի կուտակմանը:

  - Հատկապես Արարատյան դաշտավայրում դիտվում է աղակալման և եկրորդային աղակալման երևույթներ, որոնք կտրուկ նվազեցնում են հողի բերրիությունը:

  - Աղակալված հողերը դառնում են բույսերի համար անհասանելի՝ խաթարելով նորմալ սննդային ռեժիմը:

  - Աղակալման վերահսկման արդյունավետ մեխանիզմների բացակայությունը բարդացնում է մելիորացիոն միջոցառումների իրականացումը:

4. Գյուղական համայնքների շահագրգռվածության պակաս

Գյուղացիական տնտեսությունները հիմնականում փոքր են և չունեն բավարար ֆինանսական միջոցներ: Հայաստանում մեկ գյուղացիական տնտեսությանը բաժին է ընկնում շուրջ 1.5 հեկտար հողատարածք, որի 1 հեկտարը վարելահող է: Մինչև 0.5 հեկտար հողատարածք ունեցող գյուղացիական տնտեսությունները կազմում են ընդհանուրի շուրջ 42%-ը: [6]

[6] https://hy.armradio.am/archives/333850

Հիմնական խնդիրներ՝

- Փոքր հողակտորները դժվարացնում են արդյունավետ գյուղատնտեսության իրականացումը:

- Ֆինանսական ռեսուրսների սահմանափակ հասանելիությունը փոքր տնտեսվարողների համար նախատեսված շրջանառու միջոցների բացակայություն խոչընդոտում է նոր տեխնոլոգիաների և մեթոդների ներդրմանը:

- Ներկրվող գյուղմթերքի ցածր գին անմրցունակ է դարձնում

5. Արտագաղթ և աշխատուժի պակաս

Գյուղական բնակչության նվազումը և արտագաղթը հանգեցնում են աշխատուժի պակասի, ինչը բացասաբար է ազդում գյուղատնտեսության վրա:

Գյուղական բնակչության նվազման տվյալներ

- 2001 թվականին գյուղական բնակչությունը կազմում էր մոտ 1.2 միլիոն մարդ, մինչդեռ 2021 թվականին այդ թիվը նվազել է մինչև մոտ 1 միլիոն:
- Այս ընթացքում գյուղական բնակչության տոկոսային բաժինը ընդհանուր բնակչության մեջ նվազել է՝ 2001 թվականի 40%-ից մինչև 2021 թվականի մոտ 33%:[7]

Հիմնական խնդիրներ՝

- Աշխատուժի պակասի պատճառով շատ հողեր մնում են չմշակված:

- Արտագաղթը նվազեցնում է համայնքների սոցիալ-տնտեսական կենսունակությունը:

- Հայաստանի համար աշխատանքային միգրացիան տարիներ շարունակ հանդիսանում է սոցիալ-տնտեսական զարգացման կարևոր բաղադրիչ: Տնտեսական անկայունության, աշխատատեղերի սակավության և գյումարային եկամուտների բացակայության պայմաններում՝ բազմաթիվ հայեր, հատկապես՝ տղամարդիկ, տեղափոխվում են արտերկիր, որպեսզի աշխատեն շինարարության, սպասարկման, գյուղատնտեսության կամ այլ ոլորտներում:

[7] https://www.macrotrends.net/global-metrics/countries/arm/armenia/rural-population

Ամփոփագիր

Հայաստանի գյուղատնտեսական ոլորտի արդյունավետության բարձրացման համար անհրաժեշտ է լուծել վերը նշված խնդիրները՝ ապահովելով հողերի արդյունավետ օգտագործումը, ոռոգման համակարգերի արդիականացումը, հողի դեգրադացիայի կանխարգելումը, գյուղական համայնքների աջակցությունը և արտագաղթի նվազեցումը:

- Չմշակվող վարելահողերի աճ. Հայաստանում վարելահողերի հողերի ավելի քան 45%-ը չի մշակվում:
- Հայաստանում ոռոգման համակարգերի անկատարության հետևանքով մեծ մասը ոռոգելի հողատարածքների չի օգտագործվում նպատակային և արդյունավետ ձևով:
- Հողի դեգրադացիա և աղակալում. Ըստ Համաշխարհային բանկի կողմից հրապարակված «Project Identification Form (PIF)» փաստաթղթի՝ Հայաստանի գյուղատնտեսական հողերի մոտ 60%-ը տուժած է հողի էրոզիայի հետևանքով, ինչը պայմանավորված է անտառահատումներով և ոչ արդյունավետ գյուղատնտեսական պրակտիկաներով:
- Գյուղական համայնքների շահագրգռվածության պակաս. Գյուղացիական տնտեսությունները հիմնականում փոքր են և չունեն բավարար ֆինանսական միջոցներ:
- Արտագաղթ և աշխատուժի պակաս. Գյուղաբնակների շրջաններում հողագործությամբ զբաղվողների թիվը նվազում է:

ՀՀ-ում վարելահողերի սակավօգտագործման պատճառների կառուցվածքային աղյուսակ

Տնտեսական	Սոցիալական	Բնապահպանական	Իրավական	Տեխնոլոգիական
Ֆինանսավորման պակաս	Գյուղական արտագաղթ	Հողի դեգրադացիա, Էրոզիա և աղակալման խնդիրներ	Հողային փաստաթղթերի անորոշություն	Հին մեթոդներ
Վարկերի սահմանափակ հասանելիություն	Աշխատուժի պակաս	Կլիմայի փոփոխություններ	Հողերի մասնատվածություն	Գիտելիքի պակաս
Անբարենպաստ շուկայական պայմաններ	Գյուղաբնակ հասարակության ծերացում	Ոռոգման ջրի պակաս	Քաղաքականության անկայունություն	Գիտահետազոտա-կան աջակցության պակաս

Պետական աջակցության պակաս (մասնավորապես՝ կայուն, օրգանական գյուղատնտեսության նաջակցության ծրագրերի բացակայություն)	Շահագրգռվածու-թյան պակաս	Հողերի աղտոտում	Քարտեզագրման անճշտություններ, կադաստրային և իրական կորդինատների անհամապատասխանություն, սխալ դասակարգման խնդիրներ	Հյուծված մեքենատրակտո-րային պարկ
Ցածր եկամտաբերություն		Ոռոգման համակարգի անկատարություն, բացակայություն		

Նպատակը

Չնայած այն հանգամանքին, որ «Գյուղատնտեսական նշանակության հողերի օգտագործման արդյունավետության բարձրացման հայեցակարգը» սահմանում է հողերի կառավարման քաղաքականության ռազմավարական մոտեցումներ՝ ուղղված անօգտագործելի, դեգրադացված և չմշակվող հողերի վերականգնմանը և արդյունավետ օգտագործմանը, փաստացի իրավիճակը ցույց է տալիս, որ հայեցակարգը դեռևս ի զորու չէ լուծել ոլորտում առկա խորքային խնդիրները: Սա վկայում է, որ նախատեսված մեխանիզմները՝ չմշակվող վարելահողերի վերագործարկման, կայուն գյուղատնտեսության խթանման և ներդրումների ներգրավման ուղղությամբ, բավարար արդյունավետությամբ չեն իրականացվում: Արդյունքում՝ հայեցակարգը մնում է հիմնականում հայեցողային փաստաթուղթ՝ առանց գործնական գործիքակազմի ու արդյունավետ գործադրման հստակ մեխանիզմների:

Այս փաստաթուղթը ներկայացնում է հողերի կառավարման քաղաքականության ռազմավարական մոտեցումներ՝ ուղղված անօգտագործելի, դեգրադացված և չմշակվող հողերի վերականգնմանը, դրանց օգտագործման խթանմանը և գյուղատնտեսական հողերի պոտենցիալի առավել արդյունավետ իրացմանը:

Այս քաղաքականության փաստաթուղթը նպատակ ունի առաջարկել կոնկրետ մեխանիզմներ՝ չմշակվող վարելահողերը վերամշակելու, կայուն գյուղատնտեսությունը խթանելու, ներդրումներ ներգրավելու և հողերի դեգրադացիան կանխարգելելու համար:

Պետական քաղաքականություն և աջակցության ծրագրեր

Գյուղատնտեսական նշանակության հողերի օգտագործման արդյունավետության բարձրացման հայեցակարգը և միջոցառումների ծրագիրը

Հայաստանի Հանրապետության գյուղատնտեսական նշանակության հողերի օգտագործման արդյունավետության բարձրացման հայեցակարգում կան մի շարք դրույթներ, որոնք վերաբերում են չօգտագործվող վարելահողերի նպատակային օգտագործման բարձրացմանը: Ստորև առանձված են դրանցից հիմնականները՝ ըստ թեմատիկ ուղղությունների:

1. Դրույթներ, որոնք առնչվում են չօգտագործվող վարելահողերի ներգրավմանը

- **Հայեցակարգի ներածության մեջ նշվում է**, որ 2018 թվականի տվյալներով Հայաստանի վարելահողերի միայն 54.5%-ն է օգտագործվել նպատակային, ինչը ենթադրում է, որ մոտ 45%-ը չի մշակվել:
- **Գյուղատնտեսական հողերի չմշակման հիմնական պատճառներն են՝**
    - Հողակտորների փոքր չափերը և մասնատվածությունը
    - Ոռոգման ջրի հասանելիության բացակայությունը կամ անբավարար մատակարարումը
    - Գյուղատնտեսական տեխնիկայի անմատչելիությունը
    - Հողի բերրիության ցածր մակարդակը
    - Հողի սեփականատերերի երկրից դուրս գտնվելը
    - Ֆինանսական միջոցների բացակայությունը
- **Հայեցակարգի նպատակներից մեկը հստակորեն նշում է**, որ պետության քաղաքականությունն ուղղված է չօգտագործվող հողերի շրջանառության մեջ ներգրավմանը և հողի շուկայի զարգացմանը:

2. Հստակ մեխանիզմներ՝ չօգտագործվող վարելահողերի նպատակային օգտագործման խթանման համար

Հետևյալ քայլերն են նախատեսվում՝ որպես չօգտագործվող հողերի ներգրավման ուղղակի կամ անուղղակի մեխանիզմներ.

1. **Չօգտագործվող հողերի հաշվառման և դասակարգման համակարգի ներդրում**
    - Պետությունը նախատեսում է ստեղծել չօգտագործվող հողերի հաշվառման ու դասակարգման համակարգ, ինչը կնպաստի այդ հողերի նպատակային օգտագործման խթանմանը:
2. **Հողի շուկայի զարգացում և «Հողային բանկի» ստեղծում**

- Ծրագրվում է ներդնել «Հողային բանկ», որը կմիավորի չօգտագործվող հողերը և հնարավորություն կտա դրանք ժամանակավոր կամ երկարաժամկետ վարձակալության կամ վաճառքի հանձնել տնտեսվարողներին:
- Չօգտագործվող հողերի վաճառքը կամ վարձակալությունը կկատարվի աճուրդային եղանակով, ընդ որում՝ հատուկ նախապատվություն կտրվի հարևան տնտեսվարողներին և երիտասարդ գյուղատնտեսներին:

3. **Հողերի կոնսոլիդացիայի (միավորման) խթանում**
   - **Վարելահողերի խոշորացման** ծրագրերը, որոնք կներառեն նաև չօգտագործվող հողերի միավորումը, կօգնեն ստեղծել արդյունավետ ագրոարտադրական հողակտորներ:
4. **Հողի օգտագործման արդյունավետության բարձրացման խրախուսում**
   - Ներառված են տվյալների թվայնացում, ագրոքիմիական հետազոտությունների իրականացում, ինչը թույլ կտա ավելի հստակ պլանավորել հողերի արդյունավետ օգտագործումը, ներառյալ չօգտագործվող վարելահողերը:
5. **Մելիորատիվ վատ վիճակում գտնվող հողերի վերականգնում**
   - Հայեցակարգում հատուկ նշվում է աղուտ-ալկալի հողերի մելիորացման մասին, ինչը կարևոր քայլ է չմշակվող հողերը շրջանառության մեջ մտցնելու համար:
6. **Հողօգտագործման կարգավորող օրենսդրության բարեփոխումներ**
   - Ծրագրում ընդգրկված է «չօգտագործվող հողերի դասակարգման և հաշվառման կարգի հաստատման» մեխանիզմ, ինչը թույլ կտա ավելի նպատակային ծրագրեր մշակել դրանց մշակման համար:

Եզրակացություն

Հայեցակարգում առկա են մի շարք դրույթներ, որոնք առնչվում են չօգտագործվող վարելահողերի ներգրավմանը գյուղատնտեսական շրջանառության մեջ: Սակայն, չկա որևէ հատուկ պետական խրախուսման կամ սուբսիդավորման մեխանիզմ, որը կոնկրետ աջակցություն կտրամադրի չօգտագործվող հողերի մշակումը խթանելու համար:

Այս առումով հնարավոր բարելավումների համար կարելի է առաջարկել.
- **Ֆինանսական աջակցություն և խրախուսման մեխանիզմներ՝** չօգտագործվող վարելահողերը մշակող ֆերմերների համար:

- **Ջրային ռեսուրսների արդյունավետ կառավարում՝** չմշակվող հողերի ոռոգման ապահովման նպատակով:

- **Հողի շուկայի կարգավորման մեխանիզմների պարզեցում՝** սեփականատերերին հնարավորություն տալու ավելի դյուրին գործել հողային շուկայում:

Այսպիսով, հայեցակարգը որոշակի հիմքեր է դնում չօգտագործվող վարելահողերի ակտիվացման համար, սակայն գործնականում անհրաժեշտ են լրացուցիչ տնտեսական խթանման գործիքներ՝ դրանց մշակման արագացման համար:

Այս միջոցառումները հնարավորություն կտան ավելացնելու մշակվող վարելահողերի չափաբաժինը, բարձրացնելու գյուղատնտեսական արտադրողականությունը և ապահովելու Հայաստանի հողային ռեսուրսների առավել արդյունավետ կառավարումը:

Գյուղատնտեսության ոլորտի պետական օժանդակության ծրագրերի վերլուծություն

Հայաստանում գյուղատնտեսության ոլորտում իրականացվող պետական աջակցության ծրագրերը կարևոր նշանակություն ունեն հողերի արդյունավետ օգտագործման և գյուղատնտեսական արտադրության խթանման համար: Տարբեր ծրագրերի շրջանակներում վարկային և փոխհատուցման մեխանիզմների կիրառմամբ պետությունը նպատակ ունի նպաստել ոլորտի զարգացմանը:

Ստորև ներկայացված են մի քանի ծրագրերի արդյունքների տվյալներ, որոնք ուղակիորեն կամ անուղակի միտված են նպաստելու հողերի օգտգործման բարելավմանը և նպաստելու վարելահողերի նպատակային օգտագործմանը:

Ինտենսիվ այգեգործության զարգացման, արդիական տեխնոլոգիաների ներդրման և ոչ ավանդական բարձրարժեք մշակաբույսերի արտադրության խթանման պետական աջակցության ծրագիր

Արդյունքներ և ցուցանիշներ

- 2022 թվականին

Այգեհիմնման պետական ծրագրի շրջանակում հաստատվել է 2450 հա այգիների հիմնում:

Բարձրարժեք մշակաբույսերի մշակության նպատակով հաստատվել է 3,2 հա-ի հայտ:

Նախորդ ինտենսիվ այգեգործության ծրագրի շրջանակում հաստատվել է 197,8 հա-ի այգեհիմնման հայտեր:

- 2023 թվականին

Ինտենսիվ այգեգործության զարգացման ծրագրի շրջանակում վարկային և փոխհատուցման բաղադրիչով հաստատվել է 2363 հա-ի այգեհիմնման հայտեր:

Ընդհանուր առմամբ, 5010.8 հա այգեհիմնման և 3.2 հա բարձրարժեք մշակաբույսերի մշակության հայտեր են հաստատվել:

Համատեքստ և առկա մարտահրավերներ

2023 թ.-ի տվյալներով, պետական աջակցությամբ մշակվել է 5014 հա հող, դարձել է բազմամյա տնկարկ, ինչը կազմում է չմշակվող վարելահողերի (202,800 հա) ընդամենը 2.47%-ը: Այս ցուցանիշը վկայում է այն մասին, որ չմշակվող հողերի վերականգնման և օգտագործման խթանման համար անհրաժեշտ են ավելի ընդգրկուն միջոցառումներ և երկարաժամկետ ծրագրեր:

Տնամերձ հողամասերում այգեհիմնման և ոռոգման արդիական համակարգերի ներդրման փորձնական ծրագրի

Արդյունքներ և ցուցանիշներ

Ծրագրի շրջանակում Բերքաբեր բնակավայրում կնքվել է 45 պայմանագիր՝ 4.504 հա-ի համար, իսկ Խաշթառակ բնակավայրում՝ 46 պայմանագիր՝ 2.441 հա-ի համար: Ծրագրի կայունության և մոնիթորինգի տվյալները բացակայում են: Սա չի կարող դիտարկվել, որպես ներդրում չմշակվող հողատարածքների օգտագործմանը նպաստող ծրագիր:

Հողային բարեփոխումների փորձնական ծրագիր

Ծրագրի շրջանակում Արմավիրի մարզի Փարաքար համայնքի Բաղրամյան, Նորակերտ և Խոյ համայնքի Հայթաղ բնակավայրերում իրականացվել է վարելահողերի և բազմամյա տնկարկների իրավական խնդիրների ամբողջական գույքագրում, իսկ Արմավիր համայնքի Մայիսյան բնակավայրում իրականացվել են չմշակվող հողերի գույքագրման աշխատանքներ: Հայթաղ բնակավայրում «Գյուղատնտեսական ծառայությունների կենտրոն» ՊՈԱԿ-ի կողմից ձեռք է բերվել 11.4 հա ընդհանուր մակերեսով 39 հողակտոր:

ՀՀ-ում աշնանացան ցորենի արտադրության խթանման պետական աջակցության ծրագիր (2020թ. աշնանացան ցորեն)

Ծրագրի շրջանակում 2761 շահառուի կողմից իրականացվել է 15007 հա աշնանացան ցորենի ցանք:

ՀՀ-ում գարնանացան հացահատիկային, հատիկաընդեղեն և կերային մշակաբույսերի արտադրության խթանման պետական աջակցության ծրագիր (2021թ. գարնանացան):

Ծրագրի շրջանակում 3736 շահառուի կողմից կատարվել է 13299.7 հա գարնանացան գարու, առվույտի և կորնգանի ցանք:

ՀՀ-ում աշնանացան ցորենի արտադրության խթանման պետական աջակցության ծրագիր (2021թ. աշնանացան ցորեն)

Ծրագրի շրջանակում 3922 շահառուի կողմից կատարվել է 12798.63 հա աշնանացան ցորենի ցանք:

ՀՀ-ում աշնանացան ցորենի արտադրության խթանման 2022 թվականի պետական աջակցության ծրագիր

Ծրագրի շրջանակում 2023 թվականին տրամադրվել է շուրջ 4.59 մլրդ ՀՀ դրամ փոխհատուցում: Ծրագրի շրջանակում 22.483 շահառուի կողմից կատարվել է 55.278 հա աշնանացան ցորենի ցանք:

ՀՀ-ում բուսաբուծության պետական աջակցության ծրագիր 2024թ.

Ծրագրի իրականացման արդյունքում ավելացել է գարնանացան մի շարք մշակաբույսերի (հացահատիկային, հատիկաընդեղեն և բազմամյա խոտաբույսեր) ցանքատարածությունները ՀՀ ողջ տարածքում: Ծրագրի շրջանակներում իրականացվել է 19.197 հա գարնանացան:

Բուսաբուծության աջակցության 2025 թվականի ծրագիր

Բուսաբուծության աջակցության ծրագրի նպատակն է հացահատիկային, հատիկաընդեղեն մշակաբույսերի և կերային մշակաբույսերի ցանքատարածությունների ընդլայնման, դրանց մշակության արդյունավետության բարձրացման, համախառն արտադրանքի ավելացման միջոցով բարձրացնել պարենային ապահովվածության մակարդակը, ինչպես նաև բարելավել գյուղատնտեսական նշանակության հողերի որակական հատկանիշները:

Ծրագիրը նախատեսվում է իրականացնել 2025 թվականին և ընդգրկելու է Հայաստանի Հանրապետության ամբողջ տարածքը: Հայաստանի Հանրապետության

համապատասխան մարզի տարածքում խթանվում է աղյուսակում նշված մշակաբույսերի տեսակների մշակությունը:

Արտադրողականության բարձրացման նպատակով նախատեսվում է ցանքերն իրականացնել բացառապես հավաստագրված սերմերով:

Ծրագրով նախատեսվում է 2025 թվականին փոխհատուցել մինչև 100 հա մակերեսով հացահատիկային (աշնանացան և գարնանացան ցորեն, գարնանացան գարի, եգիպտացորեն, վարսակ, հաճար), հատիկաընդեղեն (ոլոռ, լոբի, ոսպ, սիսեռ) և կերային մշակաբույսերի (առվույտ, կորնգան, կերի ճակնդեղ) մշակության մեկ հեկտարի հաշվով կատարվող հիմնական աշխատանքների (վարի, ցանքի, բերքահավաքի) և սերմի արժեքի համար նախատեսված ծախսերի 50 տոկոսը:

Փոխհատուցումը կտրամադրվի հետևյալ սահմանաչափերով՝

- աշնանացան ցորենի մշակության յուրաքանչյուր 1 հեկտար մակերեսի հաշվով՝ 80 000 դրամ,
- գարնանացան հացահատիկային մշակաբույսերի մշակության յուրաքանչյուր 1 հեկտար մակերեսի հաշվով՝ 70 000 ՀՀ դրամ, իսկ եգիպտացորենի մշակության յուրաքանչյուր 1 հեկտար մակերեսի հաշվով՝ 85 000 ՀՀ դրամ,
- հատիկաընդեղեն մշակաբույսերի մշակության յուրաքանչյուր 1 հեկտար մակերեսի հաշվով՝ 100 000 ՀՀ դրամ,
- կերային մշակաբույսերից առվույտի, կորնգանի 1 հեկտար մակերեսի մշակության հաշվով՝ 110 000 ՀՀ դրամ, իսկ կերի ճակնդեղի համար՝ 80 000 ՀՀ դրամ:

ՀՀ-ում գյուղատնտեսական նշանակության հողերի միավորման (կոնսոլիդացիայի) աջակցության 2023-2025 թվականների ծրագիր

Ծրագրի շրջանակում կնքվել է 2 պայմանագիր (10-30 հա հողերի միավորում), 3 պայմանագիր (30 – 100 հա հողերի միավորում) և ևս 9 պայմանագիր (5-30 հա հողերի միավորում):

Հայաստանի Հանրապետությունում գյուղատնտեսական նշանակության հողերի միավորման (կոնսոլիդացիայի) աջակցության 2023-2025 թվականների ծրագիրն ուղղված է գյուղատնտեսական հողերի արդյունավետ կառավարմանը՝ խթանելով մասնատված հողերի միավորումը: Այս ծրագրի հիմնական նպատակն է ստեղծել ավելի խոշոր, տնտեսական առումով կայուն հողակտորներ, որոնք կնպաստեն արտադրողականության աճին, գործառնական ծախսերի նվազեցմանը և ներդրումների խթանմանը:

Սակայն ծրագրի շրջանակներում չկան կոնկրետ մեխանիզմներ կամ նշումներ չօգտագործվող վարելահողերի օգտագործման խթանման վերաբերյալ**:** Չնայած նրան, որ հողերի միավորումը կարող է անուղղակիորեն նպաստել չօգտագործվող հողերի

նպատակային ներգրավմանը, որևէ հատուկ գործիքակազմ կամ խրախուսման մեխանիզմ չի սահմանվում այս հողերի մշակումը խթանելու համար:

Միևնմույն ժամանակ պարզ չէ այդ միավորված հողերի հետագա ճակատագիրը, արդյոք դրանք ենթարկվել են մշակման, կամ կա արդյոք պլանավորում: Միևնույն ժամանակ այդքան փոքր թվով պայմանագրերը հավաստում են, որ կոնսոլիդացիայի այս մեխանիզմն արդյունավետ չէ:

Չնայած պետական աջակցության ծրագրերի շրջանակում արձանագրված դրական ցուցանիշներին՝ Հայաստանի գյուղատնտեսության արդյունավետության բարձրացման համար անհրաժեշտ է՝

- ✓ Հողերի վերականգնման և վերօգտագործման ծրագրերի ընդլայնում
- ✓ Վարկային և սուբսիդավորման քաղաքականության ուժեղացում
- ✓ Տեխնոլոգիական ներդրումների, կայուն և նորարարական գյուղատնտեսական մեթոդների խթանում

Ցավոք, չկա հետևողականություն հաջողված ծրագրերի շարունակականության ապահովման համար: Պետությունը պետք է իրականացնի չօգտագործվող վարելահողերի նպատակային նշանակության վերլուծություն, հողերի որակի քարտեզագրում և նպատակային օգտագործմանը նպաստող գործուղությունների ճանապարհային քարտեզ:

Առաջարկություններ

ՀՀ-ում վարելահողերի չմշակման և ոչ նպատակային օգտագործման դրդապատճառների զգալի մասը պայմանավորված է ոչ միայն տնտեսական գործոններով, այլ նաև հողի որակական վիճակի մասին ոչ ճշգրիտ տեղեկատվությամբ, մելիորացիոն խնդիրներով, ռեսուրսային և տեխնոլոգիական սահմանափակումներով: Հիմք ընդունելով աջակցության ծրագրերի թվային արդյունքները պարզ է դառնում, որ ներկայումս գործող պետական աջակցության ծրագրերի զգալի մասը թիրախային ազդեցություն չեն թողնում չմշակվող վարելահողերի արդյունավետ օգտագործման և նպատակային նշանակության վերականգնման վրա: Մասնավորապես, հողերի կոնսոլիդացիայի ծրագիրը իր առաջարկված մոդելով չի արդարացրել իրեն և կարիք ունի ամբողջական վերանայման: Փոխարենը առաջարկվում է մշակել և ներդնել հետևյալ պետական աջակցության գործիքակազմը:

Պետական աջակցության ծրագրեր՝ չօգտագործվող վարելահողերի օգտագործման խթանման նպատակով

1. Հացահատիկային մշակաբույսերի խթանման պետական ծրագիր՝ վերանայված պայմաններով

- Առաջարկվում է վերագործարկել ծրագիրը, սակայն տարբերակված չափանիշներով՝
    - Առաջնային սերմնաբուծության խթանում, սուբսիդավորումն անել միայն էլիտա և սուպերէլիտա տեսակի սերմնանյութի ներկրման ու օգտագործման դեպքում (պարտադիր ոռոգվող հողատարածքների դեպքում): Պայման առաջադրելով տնտեսվարողի պարտադիր գրանցումը՝ որպես սերմարտադրող:
    - Սուբսիդավորել միայն էլիտա և սուպերէլիտա սերմանյութի ներկրումը՝ պարտադիր պահանջելով համապատասխանության հավաստագրերը:
    - Եկրորդային վերարտադրության սուբսիդավորումն (F1) անել միայն տեղական սերմարտադրողից գնում անելու դեպքում՝ խրախուսելու համար տեղական սերմնաբուծությունը՝ ոռոգվող և անջրդի հողատարածքների վրա:
    - Ստեղծել պետական աջակցության ծրագրից օգտվող տնտեսությունների թվայնացված բազա: Հատկապես հաշվառման օբյեկտ դիտարկելով հողակտորը՝ կադաստրային ծածկագրով: Հնարավորություն տալ նույն հողակտորի համար դիմել 2 տարի ժամկետով, իսկ 3-4-րդ տարին պարտավորել սեփական ներդրմամբ շարունակել մշակությունը: Միայն այս պարագայում հնարավորություն տալ օգտվել այլ պետական աջակցության ծրագրերից: Սա հնարավորություն կտա շրջանառվող չմշակվող հողերի ճշգրիտ տվյալների շտեմարան ձևավորելուց բացի, այս հողակտորները հանել, դուրս բերել չմշակվող հողերի ցանկից:

- Սուբսիդավորման ծրագրից օգտվելու համար պարտադիր պահանջ ներառել հողի լաբորատոր փորձաքննության իրականացումը մինչև ցանքը:
- Տրամադրվող գումարը սահմանել՝ սերմնաբուծական ցանքերի համար՝ 120,000 դրամ/հա, արտադրական ցանքերի համար նվազման սկզբունքով նույն հողակտորի համար՝ առաջին տարին 100,000 դրամ, երկրորդ տարին՝ 80,000 դրամ:
- Այս ծրագրի շրջանակում անհրաժեշտ է հիմնել կամ արդիականացնել մերձսահմանային սերմերի լաբորատոր փորձաքննության կենտրոն՝ միջազգային չափորոշիչներին համապատասխան:

2. Բազմամյա կերային բակլազգի և հատիկաընդեղեն մշակաբույսերի մշակության խթանման պետական ծրագիր՝ վերանայված պայմաններով

ՇԵՆ ԲՀԿ-ի կողմից իրականացված «Անասնակերի արտադրություն և արոտների բարելավում՝ որպես ՔՈՎԻԴ-19 հետևանքների մեղմման միջոցառում» ծրագրի շրջանակում բարելավվել է 100 հա արոտավայր և մշակվել է 300.4 հա չօգտագործվող վարելահող Գեղարքունիքի, Շիրակի և Լոռու մարզերում:

Իսկ «Կերարտադրության ցուցադրական համայնք. բնական կերհանդակների բարելավում և չմշակվող վարելահողերի վերականգնում» ծրագրի շրջանակում իրականացվել են համապարփակ բարելավման միջոցառումներ՝ տարաբնույթ մեթոդաբանությունների կիրառմամբ: Միջոցառման շրջանակում Սիսիան համայնքի Բալաք բնակավայրում վերականգնվել և/կամ բարելավվել է 123 հա հողատարածք, որոնցից, 20 հա արոտավայրեր, 20 հա խոտհարքներ, 83 հա վարելահողեր: Ելնելով վերջին տարիների մեր հաջողված փորձից՝ լիահույս ենք, որ կերային մշակաբույսերի մշակության խթանման պետական ծրագրի կատարելագործումը՝ հաշվի առնելով մեր դրական փորձը, կնպաստի չմշակվող հողատարածքների նպատակային օգտագործմանը և կմեղմի հողերի դեգրադացիայի խնդիրը:

- Առաջարկվում է պետական սուբսիդավորման ծրագրում ունենալ հատուկ չափորոշիչներ՝ ուղղված բարձրարժեք բակլազգի խոտաբույսերի մշակության խթանմանը:
  - Բազմամյա բակլազգի կերային մշակաբույսերի սերմերի ծլունակությունը պետք է լինի առնվազն 80%:
  - Հատիկաընդեղեն մշակաբույսերի սերմերի ծլունակությունը պետք է լինի առնվազն 95%:
  - Պետք է սերմանյութը ուղեկցվի ՀՀ-ում իրականացված որակի համապատասխանության լաբորատոր փորձաքննության փաստաթղթերով:
  - Պարենի և կերարտադրության ցանքերի համար աջակցությունը սահմանել 100-110,000 ՀՀ դրամ:

- Տեղական սերմարտադրության ցանքերի համար աջակցությունը սահմանել առնվազն 130,000 ՀՀ դրամ (պարտադիր ոռոգվող հողատարածքների դեպքում):

3. Վարելահողերի դասակարգման և մոնիթորինգային նոր թվայնացված համակարգի ստեղծում և ներդրում

- Ներկայումս բազմաթիվ հողակտորներ ունեն վարելահողի գործառնական նշանակություն, մինչդեռ դրանց իրական բնութագրերը և որակական հատկանիշները չեն համապատասխանում հողատեսքի նման դասակարգման: Մասնավորապես խնդիրը վերաբերվում է անջրդի III և IV-րդ կարգի վարելահողերին: Դրանք ոչ միայն պիտանի չեն մշակության համար, այլ ձևավորում են չմշակվող վարելահողերի անփոփոխ մեծ մակերես: Այն դեպքում, երբ այդ հողատեսքերի ճիշտ դասակարգումը կնպաստի դրանց նպատակային օգտագործմանը:
- Պետք է վերանայել վարելահողի սահմանումը և անջրդի IV-րդ կարգի հողերը՝ հանել վարելահողերի կարգավիճակից: Առաջարկվում է վարելահողերի ամենամեծ չօգտագործվող մակերես ունեցող բնակավայրերից մի քանիսում պիլոտային ծրագիր իրականացնել: Դուրս բերել անջրդի III և IV-րդ կարգի վարելահողերը, դրանց դասակարգումը փոխել և հողօգտագործման այլ լուծումներ առաջարկել:
- Առաջարկվում է իրականացնել պետական մասշտաբով հողերի հեռանկարային վերլուծություն: Հողերի դասակարգումը պետք է կատարվի ինտեգրված GIS համակարգով, որը կթարմացվի ըստ սեզոնային արբանյակային դիտարկումների և ագրոտեխնիկական վերլուծությունների:
- Հողի բերրիության քարտեզագրում և քարտի առկայությունը դարձնել պարտադիր:

4. Աղակալված և ալկալի հողերի մելորացիոն ծրագիր

- Իրականացնել սուբսիդավորման մրցույթային ծրագիր աղակալված հողերի մելիորացիայի ու բարելավման եղանակների փորձարկման և նոր առաջարկությունների ադապտացման համար: Ծրագրին մասնակացության հնարավորություն տալ ոչ միայն գիտահետազոտական, ուսումնական կառույցներին, այլ նաև մասնավոր սեկտորին: Պիլոտային ծրագրերը իրականացնել ոչ միայն համայնքային, այլ նաև սեփականաշնորհված աղակալված հողատարածքներում: Ստացված արդյունքների հիման վրա՝

    - Մշակել և ներդնել պետական մելորացիոն ծրագիր՝ ուղղված այդ հողերի աղազերծմանն ու ալկալիության նվազեցմանը՝ բիոռեմիդիացիայի և այլ բնական միջոցներով:
    - Օգտագործել բնապահպանական ճշգրիտ մեթոդներ՝ գիպսավորում, գարնանային լվացման համակարգեր, միկրոբիոլոգիական վերականգնում:

- Ներգրավել միջազգային փորձ՝ այդ թվում ՄԱԿ-ի FAO, GEF և այլ համապատասխան կառույցներից՝ տեխնիկական ու ֆինանսական աջակցությամբ:

5. **Ագրոանտառաբուծության և օրգանական գյուղատնտեսության խթանում**

- Օրգանական գյուղատնտեսության պետական սուբսիդիաների տրամադրում՝ ըստ մշակաբույսերի և գործունեության տեսակի՝
    - պտուղների, հատապտուղների և բանջարեղենի, եթերայուղատու և դեղատու մշակաբույսերի, տնկիների դեպքում փոխհատուցումը 1 հեկտարի հաշվով յուրաքանչյուր տարի 300,000 ՀՀ դրամ,
    - հացահատիկի համար՝ 70,000 ՀՀ դրամ,
    - հատիկաընդեղենների համար՝ 120,000 ՀՀ դրամ,
    - կերային մշակաբույսերի համար՝ 100,000 ՀՀ դրամ,
    - օրգանական մեղվաբուծության տնտեսությունների սուբսիդավորում, մասնավորապես՝ 30-50 մեղվափոթակի դեպքում՝ 250, 000 ՀՀ դրամ, 51-100 մեղվափեթակի դեպքում՝ 350, 000 ՀՀ դրամ :
- Օրգանական սերտիֆիկացված տնտեսությունների համար աջակցության փաթեթների ներդրում: Մասնավորապես՝ ոռոգման ջրի 50% սուբսիդավորում, գյուղատնտեսական ապահովագրության սուբսիդավորման տոկոսադրույքի տարբերություն 10%-ի չափով:
- Միկրովարկեր և դրամաշնորհներ՝ օրգանական գյուղատնտեսությամբ զբաղվող ֆերմերների համար:
- Սուբսիդավորման և պետական աջակցության ծրագրերի ներդրում՝ մասնավոր տնտեսվարողների և գյուղատնտեսական միավորների կողմից ագրոանտառների հիմնման համար: Մասնավորապես՝ ջրի խնայողության ու ոռոգման համակարգերի ներդրման և արժեքավոր տնկանյութի ձեռք բերման համար: