Current Situation of Artificial Insemination in Armenia

Mikayel Haykuni, PhD

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Study objectives

- What is the policy background in Armenia on AI services?

- What is the availability and quality of cattle AI services in Armenia?

- What are the factors that affect the use of cattle AI services and how

  to improve the provided AI services?

Methodology

Desk research

Interviews

Data entry and analysis

Sample size and data collection

Map of Armenia with the highlighted marzes/regions included in the study

Sample size and data collection

Number of interviewed AI technicians and farmers by marzes/marzes

Marzes	AI technicians			Farmers		
	Currently practicing cattle AI	Currently not practicing cattle AI	Total	Using AI	Not using AI	Total
Kotayk	4	1	5	7	6	13
Syunik	11	4	15	12	12	24
Gegharkunik	6	3	9	8	9	17
Shirak	4	2	6	8	7	15
Lori	8	1	9	9	9	18
Vayots Dzor	9	3	12	11	11	22
Total	42 (75%)	14 (25%)		55 (50.5%)	54 (49.5%)	
Male	75%	25%	100%	73%	57%	65%
Female	0%	0%	0%	27%	43%	35%
Grand Total		56			109	

Policy background of AI services in Armenia

✓ AI was largely used during the Soviet Union

✓ After gaining independence in 1991 the volume of performed AI sharply decreased

✓ Nowadays only around 10 percent of cows are inseminated artificially

✓ The Republic of Armenia mainly focuses on pedigree livestock breeding

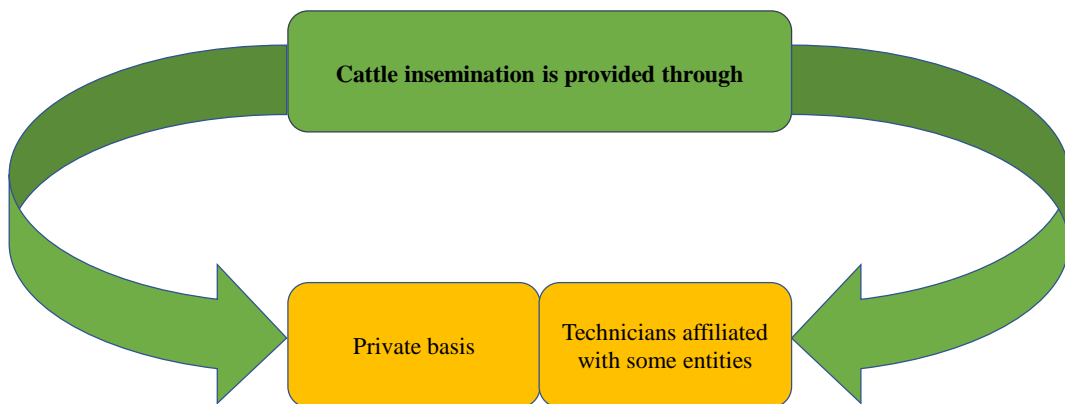✓ Besides, AI is also included in some state programmes
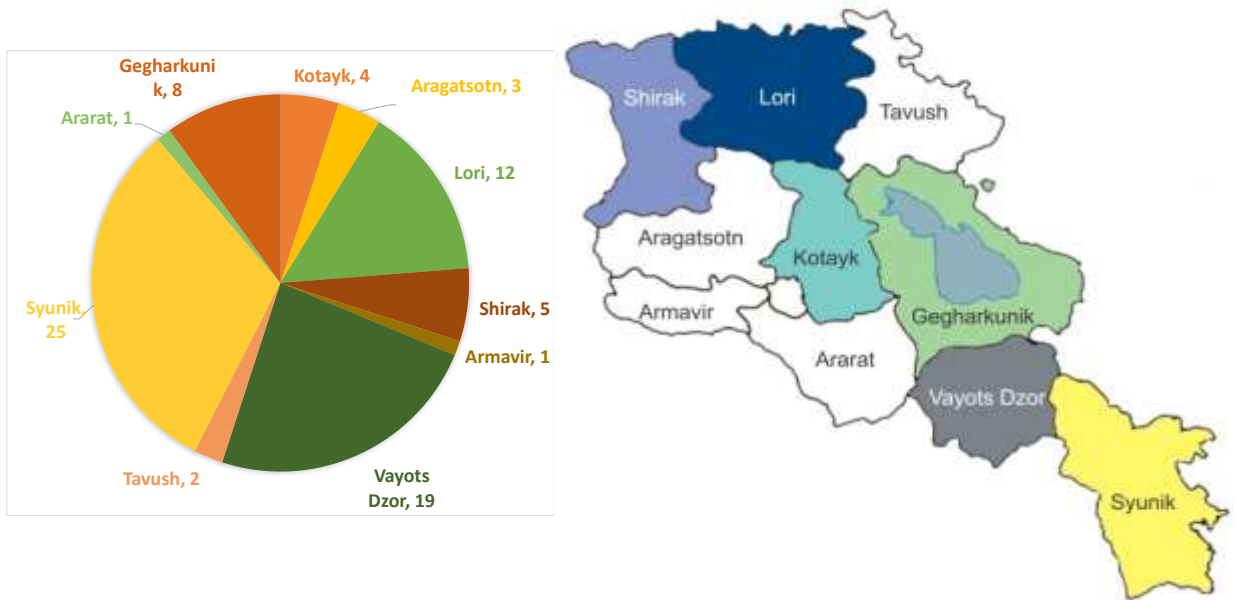
Availability and quality of cattle AI service

- During the Soviet Union, there were eleven artificial insemination centres in Armenia

- After gaining independence, most of the infrastructure related to AI services collapsed in Armenia
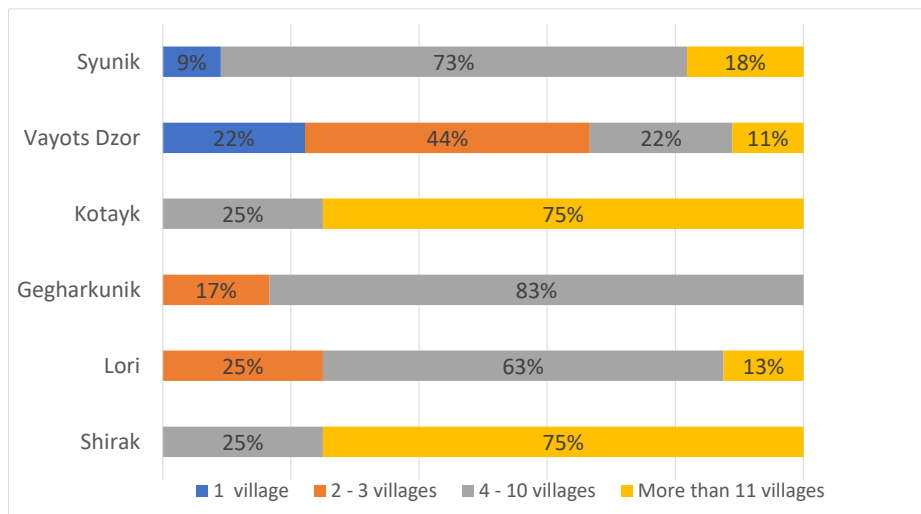

Availability and quality of cattle AI service

Cattle insemination is provided through

Private basis

Technicians affiliated with some entities

Number and geographic distribution of technicians

Gegharkunik, 8 · Kotayk, 4 · Aragatsotn, 3 · Lori, 12 · Ararat, 1 · Shirak, 5 · Armavir, 1 · Syunik, 25 · Tavush, 2 · Vayots Dzor, 19

Number and geographic distribution of technicians

Share of AI technicians currently providing AI services in the mentioned number of settlements (villages)

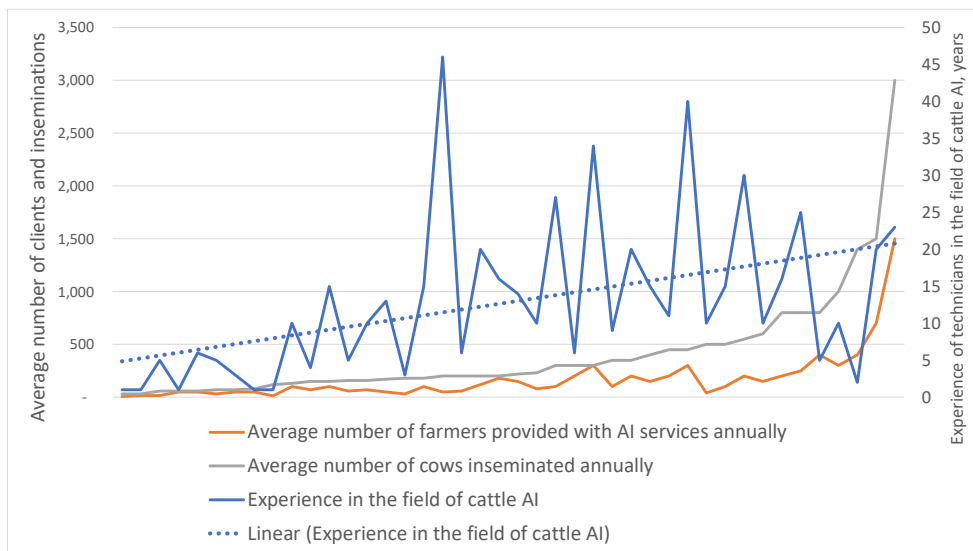| Region	1 village	2 - 3 villages	4 - 10 villages	More than 11 villages
Syunik	9%		73%	18%
Vayots Dzor	22%	44%	22%	11%
Kotayk			25%	75%
Gegharkunik		17%	83%	
Lori		25%	63%	13%
Shirak			25%	75%

Age and experience

Age distribution of interviewed AI technicians currently providing cattle AI services
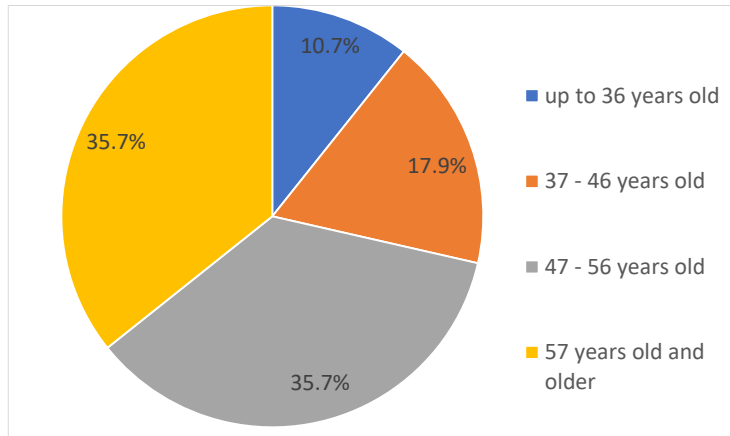
Age and experience

Relationship between experience and the number of clients and inseminations

Education and training

Provided by educational institutions (ANAU, VET institutions)

Provided by different organizations working in the agriculture development sector in Armenia

Education and training

Education and training background of the interviewed AI technicians in the field of AI

- Participated in a special training(-s) on AI
- I'm a veterinarian
- I'm a veterinarian & Participated in a special training(-s) on AI
- I'm a veterinarian & Self-taught
- I'm self-taught & Participated in a special training(-s) on AI

2% 3% 11% 2% 82%
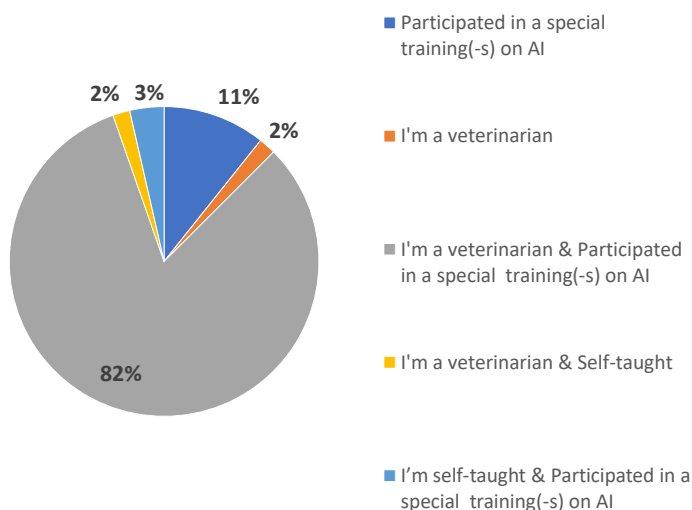
Education and training

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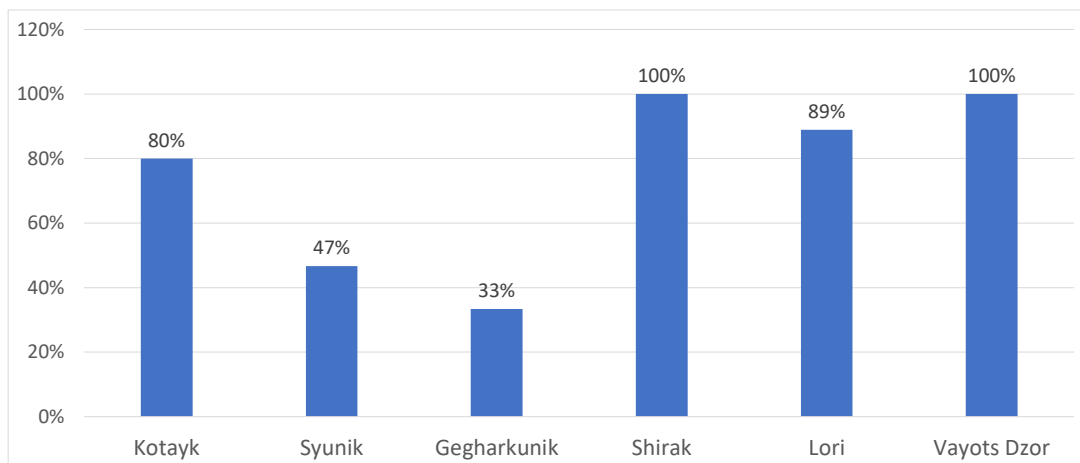
Availability (supply) and quality of inputs for AI

| Available | Not producing but available | Available | Available | Available |

Profile of AI users and their expectations

Age and education of interviewed farmers

Age
- up to 36 years old
- 37 - 46 years old
- 47 - 56 years old
- 57 years old and older

Age pie chart: 13%, 26%, 28%, 33%

Education
- Primary / Secondary
- Vocational
- Higher education / postgraduate

Education pie chart: 33%, 43%, 24%
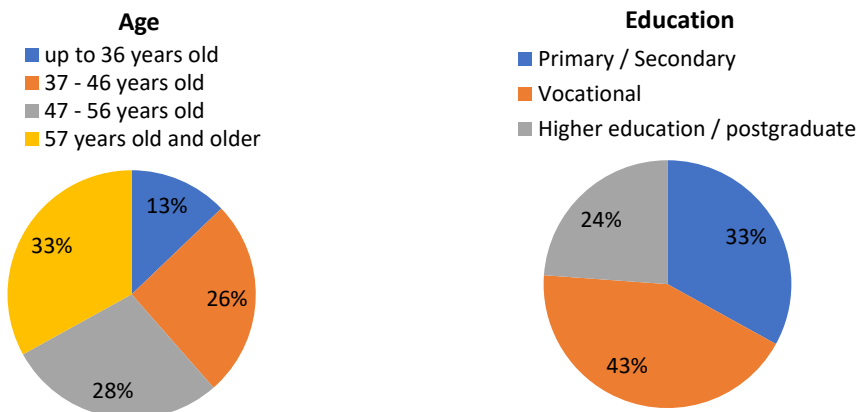
Farm characteristics and the rate of AI use

Farmers using AI by farm size, percent

First pie chart: 60%, 24%, 9%, 7%

Second pie chart: 67%, 19%, 9%, 4%, 1%

- Up to 5 heads
- 6 - 10 heads
- 11- 20 heads
- 21 - 50 heads
- more than 51 heads
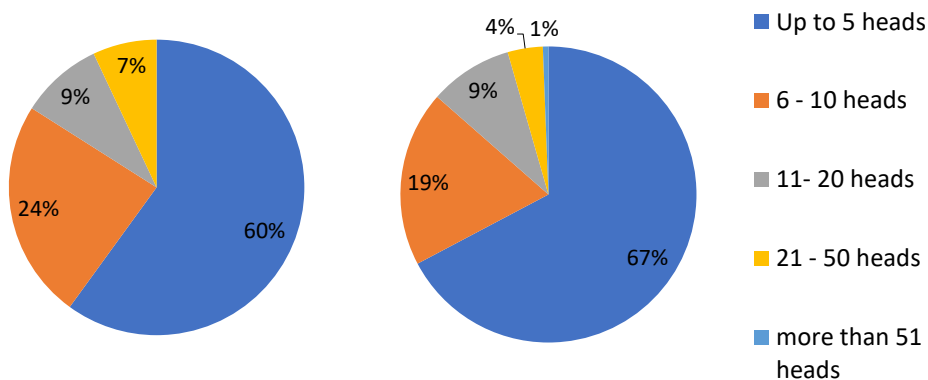
Farm characteristics and the rate of AI use

Comparison of AI use as a preferred breeding method within a farm with breed types held on a farm in Armenia

Rate of AI using within a farm	Using only pure breed Holstein Friesian	Using only crossbreed	Using only ACB	Using both Holstein and their crossbreed	Percent of Crossbreed and ACB
I use only AI as a mating method	100%	53%	45%	100%	42%
I predominantly use AI as a mating method and use natural mating rarely		47%	36%		54%
I use AI and natural mating more or less equally on my farm			9%		
I predominantly use natural mating and use AI as a mating method very rarely			9%		4%

Farm characteristics and the rate of AI use

Advantages and disadvantages of indigenous and exotic breed according to farmers in Aremnia

Indigenous breeds

Advantages
High adaptability (50 percent)
Strong feet and hooves (38 percent)
Are used to the local conditions (20 percent)
Less demanding, eat less / High productivity / More healthy / More mobile / Calm temper

Disadvantages
Low productivity (73 percent)
Low dairy productivity (17 percent)
Low meat productivity / Smaller body / Lower quality products, with lower fat / Low immunity, easily get sick / Problems with hooves
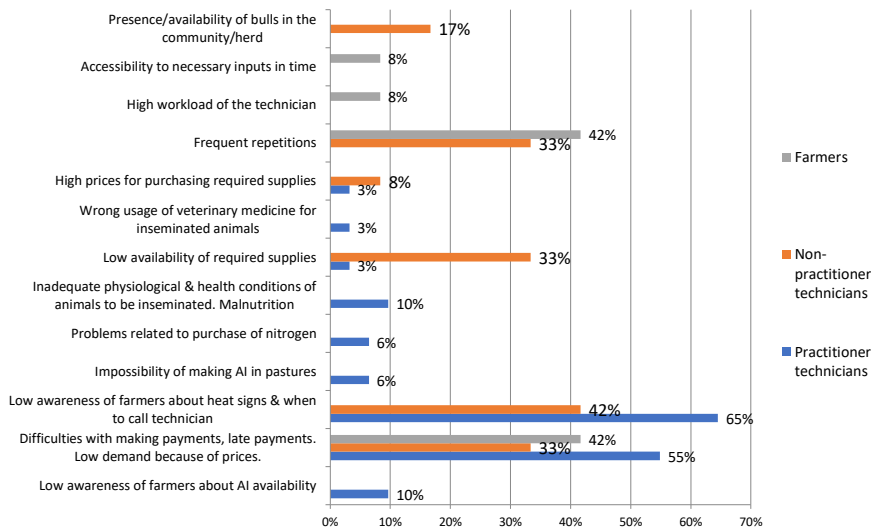
Exotic breeds

Advantages
High productivity (60 percent)
High dairy productivity (26 percent)
Faster body growth / Larger calves / Quality products, with higher fat / Bigger body / Calm temper / Beautiful

Disadvantages
Problems with hooves (69 percent)
Low adaptability, need special care / More demanding, eat more / Low immunity, easily get sick / Move slower
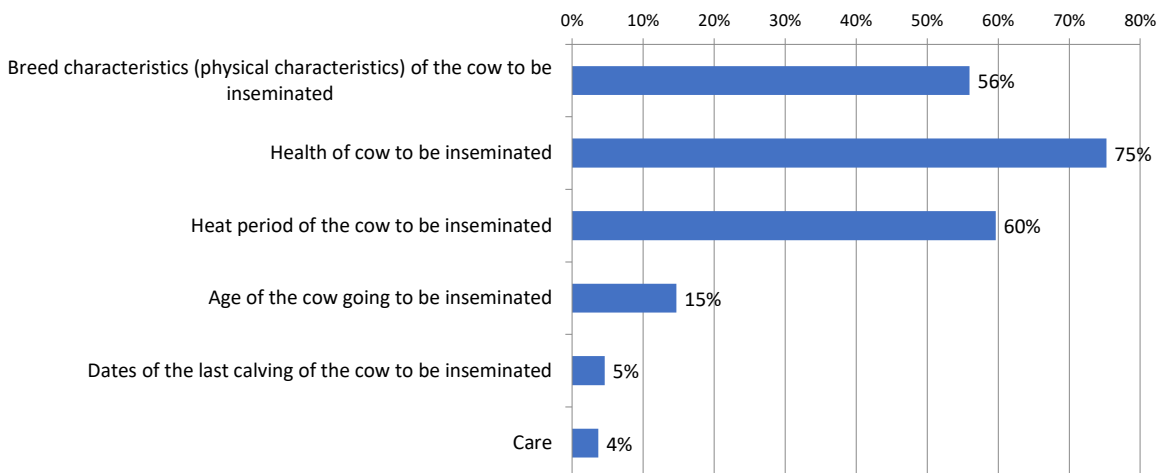
Farm characteristics and the rate of AI use

**Difficulties faced while providing and acquiring AI services**

Presence/availability of bulls in the community/herd — 17% (Non-practitioner technicians)

Accessibility to necessary inputs in time — 8% (Farmers)

High workload of the technician — 8% (Farmers)

Frequent repetitions — 42% (Farmers), 33% (Non-practitioner technicians)

High prices for purchasing required supplies — 8% (Non-practitioner technicians), 3% (Practitioner technicians)

Wrong usage of veterinary medicine for inseminated animals — 3% (Practitioner technicians)

Low availability of required supplies — 33% (Non-practitioner technicians), 3% (Practitioner technicians)

Inadequate physiological & health conditions of animals to be inseminated. Malnutrition — 10% (Practitioner technicians)

Problems related to purchase of nitrogen — 6% (Practitioner technicians)

Impossibility of making AI in pastures — 6% (Practitioner technicians)

Low awareness of farmers about heat signs & when to call technician — 42% (Non-practitioner technicians), 65% (Practitioner technicians)

Difficulties with making payments, late payments. Low demand because of prices. — 42% (Farmers), 33% (Non-practitioner technicians), 55% (Practitioner technicians)

Low awareness of farmers about AI availability — 10% (Practitioner technicians)

Legend:
- Farmers
- Non-practitioner technicians
- Practitioner technicians

Knowledge and expectations of farmers about AI and its benefits

Factors to consider before insemination, percent of farmers

Breed characteristics (physical characteristics) of the cow to be inseminated — 56%

Health of cow to be inseminated — 75%

Heat period of the cow to be inseminated — 60%

Age of the cow going to be inseminated — 15%

Dates of the last calving of the cow to be inseminated — 5%

Care — 4%

Knowledge and expectations of farmers about AI and its benefits

What is the main sign, which shows that a cow is in heat, and it is the right time for insemination, percent of farmers

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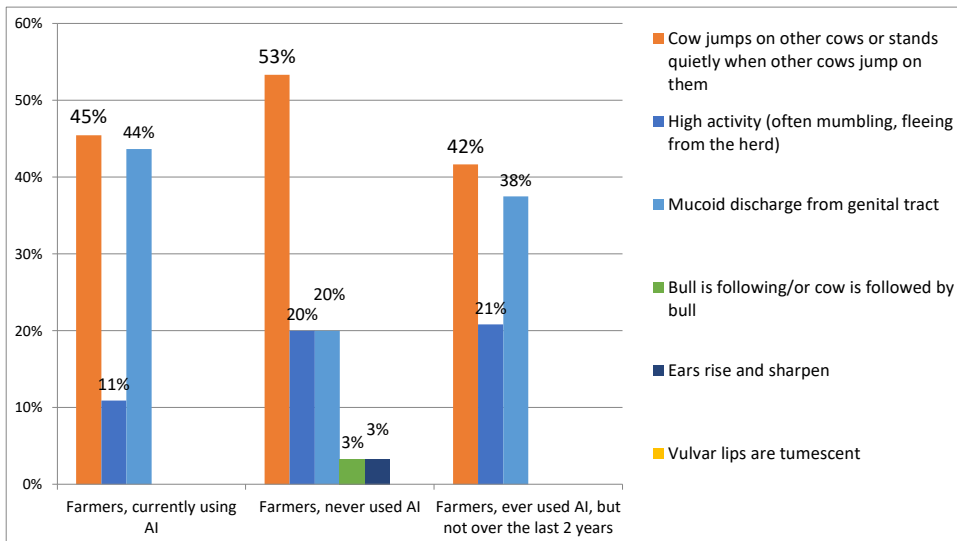
Service potential

The scenarios when the farmers will start applying AI

Scenarios	Farmers		
	Used AI services before	**Ever wanted to use AI services**	**Never wanted to use AI services**
In no case	3	0	4
Accessibility of the service	0	1	0
Availability of AI technician in the settlement	3	1	0
Provision of high-quality AI	5	2	0
Application of semen of high-quality breeds	1	0	0
Affordability of AI	12	5	0
Capability (of farmer) to detect heat on time	5	3	2
Development of livestock farming sector (higher profits from livestock)	2	2	4
Cows with suitable anatomical characteristics	0	3	2
Having sufficient conditions for animals' care and breeding	1	2	0
Availability and affordability of feed	1	0	2
If I would like to change the breed	1	0	1
Successful example of others using AI	1	2	1
Absence of bulls in pastures, in the community	2	2	1
Improved conditions of roads (intra- and inter-community)	2	1	0
I find it difficult to answer	1	1	1
Number of Farmers who have not used AI services of			

RECOMMENDATIONS

✓ **Improving national policy environment (affordability of AI services)**

✓ **Awareness raising among farmers, especially among young farmers and women**

✓ **Capacity building of AI technicians**

✓ **Ensuring the profitability of AI technicians through the use of good insemination practices and training materials**

THANK YOU

5 Aygestan str., apt. 3a, 0070 Yerevan, Republic of Armenia
Phone: (+374-94) 76 70 25;
E-mail: haykuni.mikayel@gmail.com

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