

# ARMENIA: THE PROJECT “LIVESTOCK DEVELOPMENT IN THE SYUNIK REGION”



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## BRIEF OVERVIEW OF MONITORING AND RESULTS MEASUREMENT SYSTEM

**(Including example of data collection tool used in cattle artificial  
insemination services).**

**Project funded by** The Swiss Agency for Cooperation and Development (SDC)

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## 1. INTRODUCTION

This document presents **data collection tools and example of a calculation for a set indicator** applied for measurement of results of the specific Project intervention, namely: the cattle artificial insemination (AI) in the framework of the “Livestock Development in the Syunik Region” Project (afterwards Project). **This document doesn’t aim to present in details the monitoring and results measurement system applied in the framework of the Project**, but contributes to inter projects exchange and learning process.

The Project is funded by The Swiss Agency for Cooperation and Development (SDC) and implemented by Strategic Development Agency NGO since 2008. Since September 2011 3<sup>rd</sup> Phase of the Project has been implemented aiming strengthening of livestock sector in the regions of Goris and Sisian (located in the southern part of Armenia, Syunik marz) and increase of income for farmers in the 40 target rural communities.

The document is constructed in a way to provide a reader with:

- brief information on the Project background, history, current status, goals and objectives (*presented in section 2*) as an introduction to local context and the Project interventions focus.
- brief overview of the monitoring and results measurement system (*presented in section 3*) applied in the framework of the Project (including logic of the System, data collection sources & tools, data analysis tools applied etc.) to provide a reader with general understanding on the applied System (for more details please see “Outcome Monitoring Concept SDC South Caucasus”, Author: Beka Tagauri and Harald Bekkers<sup>1</sup>).
- *Section 4* presents example of application of data collection tool (in AI sector). This part is constructed in a way to provide a reader with more detailed information on results measurement process: from result chain up to filling in the measured indicator in the database for measurement plan (as an example one of key indicators in AI sector is discussed). Some tools used in the process of results measurement (such as Measurement Plan & Database for Measurement Plan) are presented partially (not to confuse readers with complicated database which would require more detailed clarifications. *Note: Database for Measurement Plan is a specific working tool for the Project developed by the project M&E officer, which contains links and formulas, which make it difficult for usage as a sample for other projects.*

Data collection tool is attached to this document as an Annex 1.

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<sup>1</sup> [http://www.sdc-employment-income.ch/en/Home/Making\\_Markets\\_Work\\_for\\_the\\_Poor/SDCs\\_M4P\\_Project\\_Experience/Southeast\\_Europe\\_CIS](http://www.sdc-employment-income.ch/en/Home/Making_Markets_Work_for_the_Poor/SDCs_M4P_Project_Experience/Southeast_Europe_CIS)

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## 2. BACKGROUND AND HISTORY



### Background

The region of Syunik is considered as one of the most vulnerable regions in Armenia due to its remoteness, bad road conditions and the unfavorable climatic conditions through the high altitude of approximately 1500-2000 meter above the sea level. Farmers in the villages have very limited access to markets and therefore practice mostly subsistence agriculture.

### History

*"Strategic Development Agency" (SDA) NGO* is a local non-government organization founded in 2002. SDA's primary focus is to contribute to poverty reduction in RA through activities enhancing economic development and new job creation such as: implementation of innovative community based/participatory operational projects, high professional level research and analysis, trainings, seminars, business and legal advice, exchange/cooperation etc.

Since its establishment in 2002 SDA NGO has been successfully cooperating with a number of international organizations such as *Swiss Agency for Development and Cooperation (SDC/Switzerland)*, *United States Agency for International Development (USAID)*, *European Union (EU) Delegation to Armenia*, *All Armenian Fund (AAF)*, *The Izmirlian Foundation (Switzerland)*, *Interchurch Organisation for Development Cooperation (ICCO/Netherlands)*, *Armenian-European Policy and Legal Advice Center (AEPLAC)*, *Relief and Development (IRD/USA)* etc. In this period a number of projects and consulting assignments were successfully implemented (including surveys, researches, program evaluations, impact and needs assessments etc) as well as an innovative community-based participatory programs in several regions of Armenia: Syunik, Tavush, Shirak etc.

In 2006, SDA launched the project **“Raw Milk Production in South Armenia”** with the financial support of SDC. The aim of the project was to support farmers in selected communities to ensure their access to markets, veterinary services and good animal care practices and thus to provide increased incomes for farmers, improve the safety and quality of milk and enhance the overall economic development in the region.



The project was designed and successfully implemented in close cooperation between SDA and the Goris based cheese producing company ELOLA CJSC<sup>2</sup>.

<sup>2</sup> ELOLA CJSC is one of the large cheese producing companies of Armenia, which is situated in the town of Goris (Syunik region) is expanding its activities. Its production is based on raw milk collected from the neighboring villages. The company is providing direct jobs for over 100 people (as company staff), as well as income opportunities for over 400 farmers (supplying raw milk on permanent basis).

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Based on the experience of the first phase SDA project concept for the second phase named “*Livestock Development in the Syunik Region*” was developed and launched. The second phase of the project addressed the major systemic constraints of the livestock sector development beyond the dairy sector.



Thus, within the project framework complex interventions were made in terms of: **technical assistance to farmers** (training, consulting, exchange etc.); **access to farm support services** (Artificial Insemination, animal replacement, access to inputs); **access to markets (milk and meat)**; **access to finance** and **local governance** (capacity building of local/village authorities to better perform their functions in livestock sector).



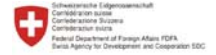
Project interventions focused on *developing markets* and assisting establishment of *sustainable support services* to create opportunities for small holder farmers to improve farm productivity and efficiency to benefit from growth.

The project registered a significant (22%<sup>3</sup>) growth of incomes from livestock (dairy production and meat) between 2008 and 2011 amongst farming households in target communities. This is particularly impressive in the context of a national reduction of incomes from agriculture, fluctuating milk prices, and an economic recession which has hit Armenia hard. While cattle numbers and agricultural incomes have reduced across much of the country, cattle numbers have increased in Goris region and rural incomes have not only been sustained but have grown in spite of the poor overall economic climate and declining agricultural incomes.

In total over **1.9 million USD** of additional income was generated in meat and dairy sector in the project target area. This growth has been realized amongst 16 remote rural communities in the Goris area amongst which two thirds of the households (over two thousand) rely heavily on income from cattle.

<sup>3</sup> Source: Baseline and Impact Survey amongst farmers

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## 3. “LIVESTOCK DEVELOPMENT IN THE SYUNIK REGION” PROJECT (III PHASE)

The Swiss Agency for Cooperation and Development (SDC) and Strategic Development Agency (SDA) agreed on implementation of the III-rd phase of “Livestock Development in the Syunik region” Project based on a merger of two SDC-funded interventions in the livestock sector, namely: the “Sisian Rural Self-Reliance Development Project” (implemented since 2002 by ACF) and the “Syunik Livestock Development Project” (implemented since 2006 by SDA).

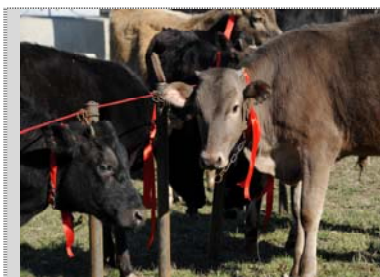
The overall goal of the project is *the strengthening of livestock sector in the regions of Goris and Sisian and increase of income for farmers in the target communities.*

The project III-d phase covers **40 target rural communities** in Goris and Sisian regions with a population of about **30,000 people** or **7,000 households** (of which 75% are involved in animal husbandry).

Proposed project objectives focus on *deepening* and *strengthening* the impact received during the previous projects and replicating successful models in Goris and Sisian throughout the whole region/all target communities.

Project objectives include:

**1) Access to milk market is ensured** through upgrading existing market linkages and promotion of new ones between farmers and processors enabling wider market opportunities and more sustainable relationship between the parties.



**2) Access to meat market is ensured** through development of meat market mechanisms and linkages between meat market players and farmers at upper scale level (of two regions: Goris and Sisian) to assure sustainable access to better organized meat market

**3) Access to farm support services and inputs is ensured** such as Veterinary Services, Artificial Insemination and breed improvement, agricultural inputs, machinery and mechanization services etc. through limited investment initiatives and local capacity building of existing service providers and bringing new ones into project area to strengthen efficiency, level of usage and sustainability of provided support services



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and inputs to farmers.

4) *Capacity and skills of farmers are improved* in terms of new approaches and techniques in farm management, planning, breed improvement etc. through both: strengthening extension service providers, input & services providers and other market players to advise farmers and training, day-to-day consulting, exchange and information dissemination provided by the project on other relevant issues.



5) *Capacities of local self-governance bodies to support rural economic development are strengthened* in the issues related to livestock sector through further strengthening of local/village authorities' capacity to better perform their functions, respond to farmers' needs in livestock sector (including daily operations, natural resources planning and management, information dissemination and support to farmers in dealing with finance and other institutions).



**Making Markets Work for the poor (M4P)** approach is applied by the project team within the project framework. Main principles of M4P are followed, such as:

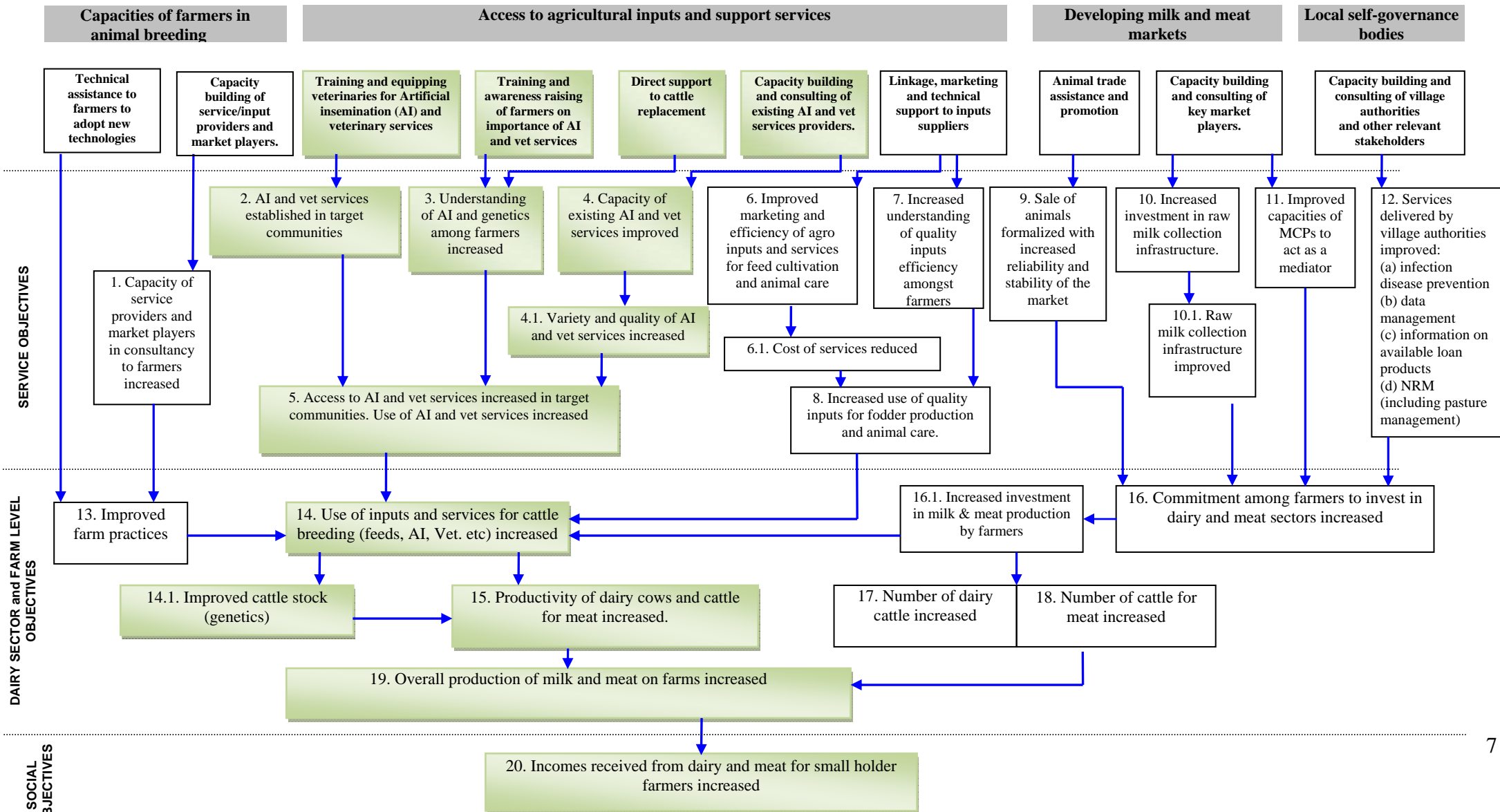
- **Focus on the poor and their access to** and interaction with **the livestock market** are the top priority while implementing the project;
- **Sustainable changes** are facilitated in the markets which assumes bringing together naturally interested parties (market players and farmers) with clear understanding of benefits of each party, strategy and actions to take;
- **Supporting functions markets** (veterinary services, AI, fodder etc.) in addition to the core markets (dairy and meat) are of special focus of the project;
- **Facilitation and coaching** remain the work style of the team, which assumes relatively short-term committed purposeful interventions in the market and an exit leaving the market and market players to perform their functions independently.

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## Results Chain for “Livestock Development in the Syunik Region” Armenia (third phase)





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## 4. MONITORING & RESULTS MEASUREMENT SYSTEM OVERVIEW

Project Monitoring and Evaluation Concept is based on the Outcome Monitoring Concept (OMC) prepared by the Swiss Cooperation Office South Caucasus with the support of the Springfield Center for Business in Development.

Project Monitoring and Evaluation system is based on the Project Log frame and the Result chain which has three levels (social level objectives, sector & farm level objectives, service level objectives). The number of steps (i. e. boxes) within each level is defined by the logic of the intervention. Each box carries a quantifiable indicator and is measured to establish attribution between project activities and higher-level results. Measurement of the right levels at the right time is done according to a Measurement plan. All activities related to the data collection, analysis and presentation of project level outcomes lead to attaining project goal.

Project Monitoring and Evaluation process includes: **Baseline Study** /status of key indicators/, **On-going Monitoring and evaluation** /on-going data collection and periodic assessment - updating monitoring forms, developing new tools, data collection, processing, periodic assessment/ and **Impact Study** /Project outcomes and impact assessment/. In the frame of Studies and Project monitoring indicators of Project outputs and outcomes are gender disaggregated, to the extent possible.

To the extent possible, data collection and monitoring tools/forms serve as operating tools for market players /Veterinaries, Artificial insemination (AI) technicians, Milk collection points /MCPs/, Financial consultants /FCs// and provided on defined time schedules: monthly, quarterly, semi-annual and/or an annual basis.

### **Information sources and data collection tools**

Primary and Secondary Sources of information and appropriate data collection tools by above mentioned three stages are presented in the table below.

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STAGES	Data collection sources & tools	Primary data collection tools						Secondary data collection tools	
		Quantitative survey		Qualitative survey			Company records	On site observation	Desk research <sup>4</sup>
		semi-structured questionnaire	structured questionnaire	in-depth interviews	Focus Groups	Expert interviews			
BASELINE	Farmers	v			v			v	
	Market players <sup>5</sup> :	v		v		V	v		
	Village authorities	v		v					v
	Regional authorities					V			v
	Experts/ stakeholders					V			
	Official statistical sources					V			v
ON-GOING MONITORING	Farmers		v		v			v	
	Market players <sup>6</sup> :	v					v		
	Village authorities	v		v					v
	Regional authorities					V			v
	Experts/ stakeholders					V			v
	Official statistical sources								
IMPACT STUDY	Farmers	v			v				
	Market players <sup>7</sup> :	v		v		V	v		
	Village authorities	v		v					v
	Regional authorities					V			v
	Experts/ stakeholders					V			
	Official statistical sources					V			v

<sup>4</sup> official statistics, publications, reports etc.

<sup>5</sup> Veterinaries, AI technicians, Input and service providers, Milk processors, Milk collection points /MCPs/, Input suppliers

<sup>6</sup> Veterinaries, AI technicians, Input and service providers, Milk processors, Milk collection points /MCPs/, Input suppliers

<sup>7</sup> Veterinaries, AI technicians, Input and service providers, Milk processors, Milk collection points /MCPs/, Input suppliers

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## Data analysis

Once the qualitative and quantitative data is collected, depending on the sample size and type of information, it is being entered into a corresponding database created and used throughout the whole course of the project. *Quantitative data* with the large sample is entered into SPSS database, and data with smaller sample is processed by Microsoft Excel. *Qualitative data* is reflected via Microsoft Excel and/or Word.

The data is being analyzed using SPSS and/or Excel analysis tools and crosschecked with the information gathered from different sources. For final calculation and presentation of Project output and outcome indicators /as described in the measurement plan/ the analyzed data is moved into a new Excel spreadsheet, where each indicator is measured and compared. This cumulative tool represents the calculation basis and calculation formulas of each indicator presented in the “Measurement plan”.

## 5. EXAMPLE OF DATA COLLECTION TOOL

**Annex 1** includes one of the data collection tools used for on-going monitoring of intervention undertaken by the project in the area of Artificial insemination services development, which is placed under the **Objective 3 of the Project: Access to Farm Support Services and Inputs is ensured.**

The project intervention in *Farm Support Services and Inputs sector is focused on improving farmers’ access to relevant support agricultural services, which will result in increased volumes of purchase of agricultural inputs (feeds, medicine etc.) and services (Veterinary, AI, Mechanization etc) due to improved accessibility, reduced costs and increased understanding. The quality of livestock (in terms of genetics, productivity etc.) will be improved in the result of Artificial Insemination (AI) and cattle replacement as the productivity and volumes of raw milk and meat supplied will be due to increased use of agricultural inputs and services.*

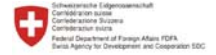
Project aims strengthening efficiency of AI services in the project target area through supporting to establishment of AI services in new communities (not covered by previous projects) and technical assistance to existing AI facilities in Goris and Sisian to strengthen their capacity and sustainability.

This will be achieved using a complex set of **activities** under the objective component including:

- a. Breed improvement through Artificial Insemination (AI) services in communities (not covered by previous projects) by coordinating the supply of AI, training and equipping local vets/AI technicians.
- b. Continuous technical assistance and marketing support to existing AI facilities in Goris and Sisian to strengthen capacity and sustainability.
- c. Direct support to animal replacement (of bad “non-productive” ones with better quality ones) in the project area to assist in recovery/improving the quality of livestock after series of disease outbreaks.

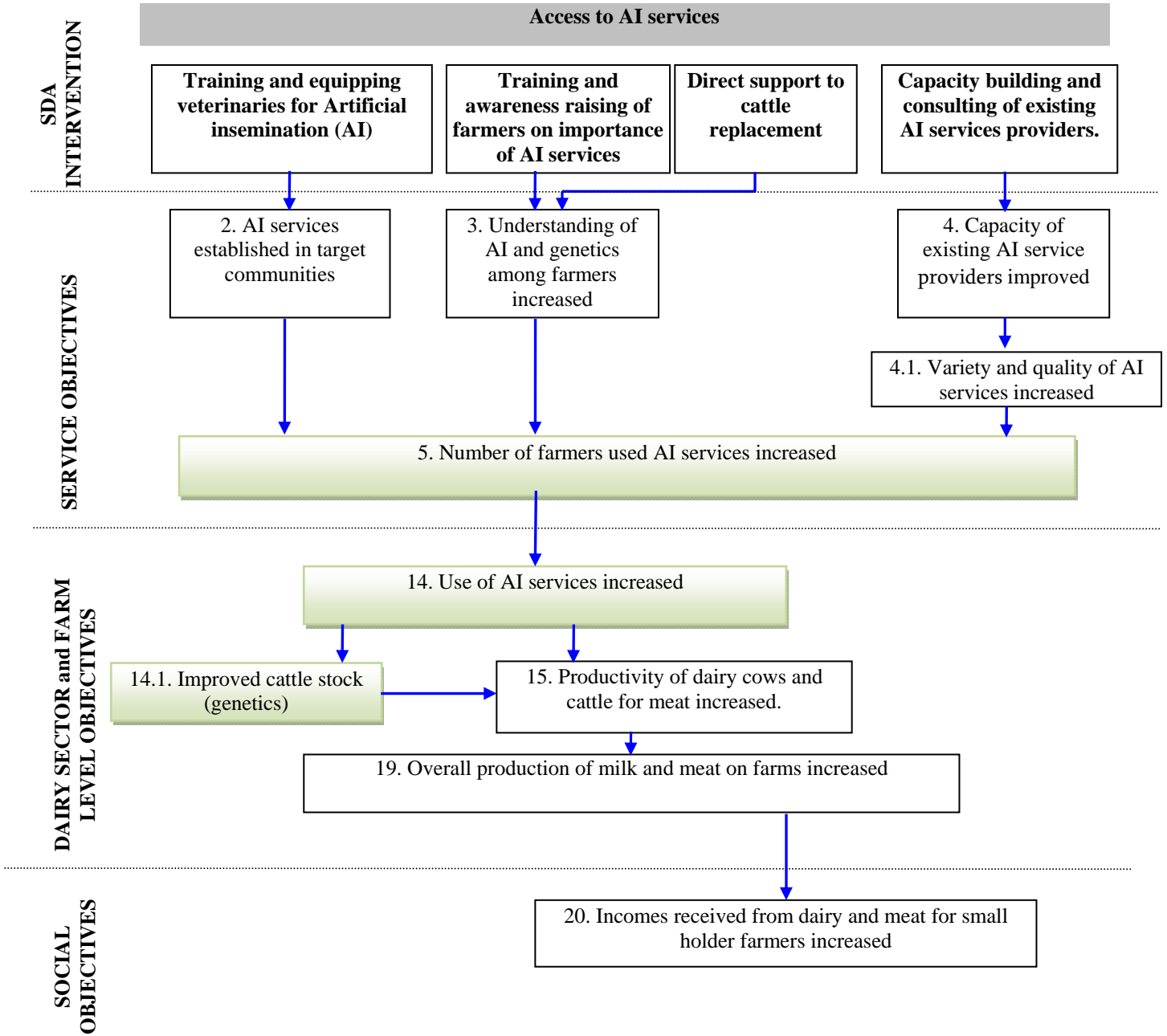
Below is presented the result chain of the project intervention in the area of AI services, which introduces the logic of activities as well as the basis for monitoring, results measurement and management.

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## Result chain for AI services intervention



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For each box of the result chain appropriate indicators are set. Monitoring plan and methods, as well as data collection tools and schedule for data collection are developed to monitor and measure each indicator. The specific indicators of the Result chain are compactly described in the measurement plan which also contains the time schedule, data sources and the means of verification.

The table below is a part from the measurement plan which presents 3 indicators measured by the data collection tool attached as an Annex 1:

- **Indicator N 5** Number of farmers used AI services set for box N5 (service level)
- **Indicator N 14** Number of cows inseminated set for box N14 (sector & farm level)
- **Indicator N 14.1** Number of calves born in the result of AI set for box and Number of cows with improved quality/breed for box N14.1 (sector & farm level).

Note: see result chain, page 11.

Example of the measurement plan (developed in the beginning of the Project and adjusted in the beginning of intervention once needed)

Level	Box N	Indicator	Baseline Data as of 31.08.2011	Source	Predicted Impact	Date	Means of Verification
Use of AI and vet services increased	5	Number of farmers used AI services	45% of farmers having cows (1493 farmers of which 45 female)	Baseline study, Interviews with AI technicians & Reports	80% of farmers having cows (sex-disaggregated data)	Sept. 2011 –Baseline study; March 2013 –Interim study; Sept. 2014 - Impact study. Each six month - interviews with AI technicians	Baseline Report, Data Summarized table
Use of AI services increased	14	Number of cows inseminated	3,421 cows	Baseline study, Interviews with AI technicians & Reports	100% increase	Sept. 2011 –Baseline study; March 2013 –Interim study; Sept. 2014 - Impact study. Each six month - interviews with AI technicians	Baseline Report, Data Summarized table
Improved cattle stock (genetics)	14.1	Number of calves born in the result of AI	2,083 calves	Baseline study, AI technicians' reports Interviews with experts	100% increase	Sept. 2011 –Baseline study; March 2013 –Interim study; Sept. 2014 - Impact study. Each six month - Interviews with AI technicians. Interviews with experts – per annum.	Baseline Report, Data Summarized table
		Number of cows with improved quality/breed	755 cows		15% increase by the end of the project		

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## Data collection & analyzing tools

Data collection tool for above mentioned indicators is presented in the Annex 1 and consists of two sheets:

- Sheet 1 – primary data provided by AI technicians per farmer used AI services,
- Sheet 2 – aggregated data calculated on the basis of Sheet 1 to reflect value of some indicators (e.g. number of farmers used AI services) and/or serve as a basis for calculations of some indicators (e.g. Number of cows with improved quality/breed).

### Example: see [“AI form” Excel] - sheet1

[“AI form” Excel] – sheet1] presents “Artificial Insemination data” sheet which is filled in and provided by AI technicians on a six months basis. The form was developed by the Project team and introduced to AI technicians as both: a “management tool” for provision of AI services and “monitoring tool” for the Project and themselves.

The form presents detailed data related to this sector and the process of AI provision and results (from insemination up to calve birth in the result of AI): *for example, "Location/community", "Number of farmers used the service", "Number of cows inseminated", "date of insemination", "Cost of Service", "Type of semen", "Repetition", "Number of Newborn calves", etc.* Data is processed and subjected to the quantitative and qualitative analysis.

### Example: see [“AI form” Excel] - sheet2

[“AI form” Excel] – sheet2] presents aggregated data /quantitative data analysis/ of Artificial Insemination [“AI form” Excel] – sheet1]. Other part of the data is processed and subjected to the qualitative analysis. There are some formulas based on sheet1, / *for example, Average price*/, but in some cases data analysis is provided through the “filter function” or using SPSS software to avoid duplicating the data in the same column.

**Example:** The calculation of **Indicator N 5 Number of farmers used AI services /.**

“Farmers' Name, Surname” /[“AI form” Excel] - sheet1, Column E/, “Identification N/N of HH” /[“AI form” Excel] - sheet1, Column D/, and “Farmers sex” ([“AI form” Excel] - sheet1, Column F) columns are the basis of calculation of the **Indicator N5**.

[“AI form” Excel] - sheet1: columns D, E and F.

D	E	F
Identification N/N of HH	Farmers' Name, Surname	Farmers' sex. to fill: male-1, female-2
6	Zaven Hayrikyan	1

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To avoid duplicating farmers from the same households/farms (different household members could apply for AI services during the season) each farmer is provided with a code/“*Identification number*” and the same household members hold the same code. This approach allows to use SPSS software for further analysis (“*Identification number*” is the code for each farmer for data analysis with SPSS) or “filter function” of Excel to obtain more accurate data.

Column F: Farmers’ sex is also coded “male -1, female -2” which also allows making analysis by SPSS software or “filter function” of Excel.

Calculated data for Indicator N5 are filled in [**“AI form” Excel**] – sheet 2, columns D, E and F, the data is used as a base for filling the Project measurement plan (additional calculations are done using additional data gathered from other sources (e.g. Number of farmers having cows)) and reporting.

[**“AI form” Excel**] - sheet2: columns D, E and F.

D	E	F
<b>N of farmers used AI services</b>		
<b>total</b>	male	female

Below is presented the part of the Measurement Plan (Excel sheet) which reflects the progress of indicators in the course of the Project. Measurement Plan is updated every six months (linked with the reporting schedule). Based on the specificity of indicators and interventions (start date, seasonality, time required to observe and count results etc.) schedule for reporting is planned (e.g. Indicator N5: number of farmers used AI services is reported on annual basis and compared with baseline data (set for the same period of time) due to:

- seasonality issue (high season is March-September, in the meantime the project half-year reporting period is September-February),
- AI interventions have started in 2009 (2<sup>nd</sup> Phase of the Project), which means that baseline data cannot be set as “zero level” (in these cases progress can be reported on half-year basis which shows the “net” increase).

Example: Part of Database for Measurement plan with filled data

Level	Box N	Indicator	Source of information	Data as of 29.02.2012	Of which women (as of 29.02.2012)	Data collection tool	Data collection Date	Comments	Reporting schedule
Use of AI and vet services increased	5	Number of farmers used AI services	AI technicians’ reports	239	7	AI Form	March, 2012	Data for period of 01.09.2011-29.02.2012	Annual

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For the Project/intervention management purposes further analysis is done if required (e.g. all data is calculated for each community as well as per AI technician) to deeper understand the situation and progress in each community. Based on the performance of the community and/or AI technician appropriate adjustments are done in activities, sector level performance serve as a base for the intervention adjustment.