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**Modernization of the Vocational Education and Training and Extension Systems Related to Agriculture in Georgia**

**Deliverable #1: Project Impact Assessment Methodology**

**Prepared for: The United Nations Development Programme (UNDP)**

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**May, 2018**

**Tbilisi, Georgia**

**TECHNICAL & FINANCIAL PROPOSAL**

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**1. Study Background**

The agricultural sector plays an important role in social and economic development of Georgia as it is the dominating source of financial and non-financial incomes for the rural population. The development of a high-quality training and extension system is an important element in providing support to the farming world that will provide farmers with the necessary knowledge to increase their productivity and incomes.

To this end, UNDP and SDC have jointly launched implemented the project – ‘Modernisation of the VET and extension system related to agriculture in Georgia’ in 2013.

The project aimed to contribute to the development of a system of high quality vocational training and extension services in agriculture that would result in improved livelihoods of the rural population. The project contributed to the development of:

* Innovative, relevant and effective and high-quality VET and extension services offered by the public and private sector.
* Systems to produce qualified human resources (multipliers) that offer various types of trainings and services to farmers and capacitate them with knowledge and practical skill is set up in close collaboration with national partners and other SDC projects.
* Public-private cooperation and partnership model for coordination and provision of VET and extension services in agriculture.

The United Nations Development Program designed and developed the systems for delivery of flexible and demand driven vocational education training and re-training programmes in agriculture. The trainings to farmers was provided by the public and educational institutions along with private institutions and service providers. The goal of the VET models and new trainings programmes was to increase the farmers’ knowledge, which followed by the quality improvement of their produce and finally steady increased in their productivity and income.

In the framework of the project, there were farm consulting and farmers’ training activities implemented in three regions (Samtskhe Javakheti, Samegrelo Zemo Svaneti and Racha Lechkhumi Kvemo Svaneti) through different interventions:

* Face to face consulting of 1,426 farmers;
* Group consulting of 6,076 farmers;
* Short term trainings of 2,693 farmers.

Together with farm consulting and training, implementation of modular programs in VET institutions resulted in 363 VET graduates who graduated the targeted VET colleges and got employed in 2014-2016 years.

The Project Logical Framework clearly defines overall goal of the project and the set of impact indicators that are to be used to measure the impact of the project:

* Improved living conditions or rural population;
* Increase in farming and non-farming income;
* Increase in gross margin of top 5 crops;
* 70 % of a) all graduates of modular programmes, (b) of all trained farmers and (c) of all advised farmers are applying improved agricultural practices, gained knowledge and/or recommendations.

In order to inform SDC and UNDP about the impact of the project on beneficiaries and directions of the future intervention ACT is implementing Project Impact Assessment.

The main goal of the Final Project Assessment is to collect, analyse and provide traceable information on wider economic effects of the project: “Modernization of the VET and Extension System related to Agriculture in Georgia” on farmers, VET students and rural households’.

This document presents ACT’s approach on implementing assessment aiming at measuring the results of above mentioned activities and project’s achievements against target indicators.

**2. Farmers’ Survey**

# **2.1.** **Objectives of the Farmers’ Survey**

Overall goal of the farmers’ survey is to assess to what extent, if any the project activities influences farming activities and overall quality of life of farmers. More specifically, assessment will focus on measuring project outcomes against the indicators outlined in the Project Logical Framework. Accordingly, farmers’ survey will gain information on:

* Farmers’ socio-demographic profile;
* Socio-economic condition of farmers;
* Farming and non-farming activities and income sources related to each of them;
* Crop production and animal husbandry;
* Farming skills and knowledge;
* Assessment of training and extension services;
* Access to finance;
* Etc.

**2.2. Farmers’ Survey Technique and Instrument**

In order to address research objectives ACT uses quantitative survey methodology particularly, face-to-face interviewing with CAPI (Computer Assisted Personal Interview) technique as a data collection mean.

Draft version of the farmers’ survey instrument has been elaborated in close cooperation with UNDP and program stakeholders. Before initiating fieldworks pilot study of questionnaire has been conducted in order to test the draft questionnaire together with the whole process of the fieldwork. In scopes of the pilot survey 10 interviews were conducted with program beneficiary farmers from Samegrelo region.

Final version of the survey instrument has been elaborated based on the pilot study results and in cooperation with UNDP team (See annex #1: Farmers’ questionnaire).

# **2.3. Farmers’ Survey Sampling Design**

Sample frame for the farmers’ survey is represented by project beneficiary farmers. Namely, UNDP provided survey team with the full list of the farmers who either received individual or group consultation or attender short term trainings in scopes of the project.

At initial stage of the survey implementation ACT database team together with sampling expert conducted preliminary review of the farmers list. Total three databases were provided to survey team for each of the target regions: Samegrelo-Zemo Svaneti, Racha-Lechkhumi, Samtskhe-Javakheti.

Initial review of the databases reveled that format of the lists was not consistent across regions and information provided for region was not structured in a format usable for data aggregation purposes. Besides, only Samgrelo-Zemo Svaneti farmers’ database included location identification data (municipality, settlement, address) while Racha-Lechkhumi, Samtskhe-Javakheti lists provided only name and contact number of the beneficiary farmer. Data review showed that the databases included duplicated cases when farmers who attended more than one training where listed for each training in multiple times and no identification was included in the dataset to aggregates unique number of beneficiary farmers. ACT database team conducted review and analysis of the farmers list and created final sample frame for the survey.

At the second stage of sample formation, ACT field department conducted database actualization activity for Racha-Lechkhumi and Samtskhe-Javakheti farmers list. Namely, as the databases included only minor information on the beneficiary farmer (name and telephone number) ACT CATI (Computer Assister Telephone Interview) center conducted phone calls to all farmers listed in the databases to register location and address of the farmer. This information was necessary for logistical planning of the fieldwork activities.

Final datasets of beneficiary farmers lists with detailed address identification was handled to fieldwork management team for further procession (See annex #2: Farmers’ Sample Frame).

In order to receive statistically reliable data on project indicators sample size of the survey was defined by 600 farmers. 200 farmers were randomly sampled in each region and oversample of the farmers to mitigate non-response cases was also created.

The table below shows results of the database analysis and survey sample allocation:

**Table #1. Farmers’ Survey Sample**

|  |  |  |  |
| --- | --- | --- | --- |
| **Region** | **Number of farmers as provided by UNDP** | **Number of unique farmers** | **Target Number of Completed Interviews** |
| Samegrelo-Zemo Svaneti | 1517 | 1045 | 200 |
| Racha-Lechkhumi | 2078 | 728 | 200 |
| Samtskhe-Javakheti | 827 | 767 | 200 |
| **Total** | **4422** | **2540** | **600** |

# **2.4. Farmers’ Survey Fieldwork Implementation**

Fieldwork preparatory works is performed in three main stages:

1. Development of fieldwork implementation plan;
2. Recruitment of field staff;
3. Training of field staff;

The first step of fieldwork preparatory work is the development of a **fieldwork implementation plan**. The fieldwork implementation plan has two main components:

1. A general fieldwork implementation plan, which defines main functional units involved in the fieldwork and states their functions and duties. It also describes the general chain of activities to be followed by each functional unit.
2. A detailed fieldwork management plan, which defines the exact logistics and timing of the fieldwork. The fieldwork management plan should involve the starting dates and main deadlines for all fieldwork phases.

Two main functional units will be involved in the implementation of fieldwork. These units are:

1. In-office fieldwork management team (fieldwork manager, data quality control supervisor and other in-office staff);
2. Fieldwork team (interviewers).

The figure below describes the chain of activities during the fieldwork implementation process.

**Figure #1. Fieldwork Implementation Process**

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**In-office fieldwork management team** members include:

* **A fieldwork manager** responsible for the development of fieldwork logistics and monitoring the timely implementation of fieldwork;
* **A data quality control supervisor** responsible for monitoring quality control procedures and supervising the work of control interviewers and revision and logical control specialists;
* **Questionnaire revision and logical control specialists**, responsible for the revision of completed questionnaires before the commencement of electronic data entry;
* **Coding specialists** responsible for coding open-ended answers in completed questionnaires;
* **Quality control interviewers for telephone control** responsible for calling a randomly selected small sample of survey respondents in order to check interviewer performance.

The **Fieldwork team** should include:

* **Regional fieldwork supervisors** responsible for fieldwork management and fieldwork monitoring;
* **Interviewers** responsible for field visits and completing the interviews.
* **Reserve interviewers** who may become involved in the fieldwork as substitutes for interviewers who withdraw for various reasons.

**Table #2. Farmers’ Survey Field Team**

|  |  |
| --- | --- |
| **Position** | **Number of Personnel** |
| Field manager | 1 person |
| Regional fieldwork supervisors | 3 persons |
| Data quality control supervisor | 1 person |
| Questionnaire revision and coding specialists  | 2 persons |
| Quality control interviewers for telephone control | 3 persons |
| Interviewers | 12 persons |
| Reserve interviewers | 6 persons |

For the implementation of above study ACT involved high competitive staff who have strong expertise of working with different target groups such as employers, households, farmers and rural population in general.

Trainings for field staff was conducted prior to the start of fieldwork activities. For regional supervisors’ trainings were held in Tbilisi head office. After that Regional fieldwork supervisors will conduct training sessions for regional interviewers in regional offices of ACT. Training of field staff were performed by the ACT project manager and field manager. Traininees were instructed on the following issues:

* **Survey theme (goals and objectives)**
* **Survey instrument**
* **CAPI software**
* **Technical issues and fieldwork logistics**–procedures for the timely and efficient implementation of a fieldwork.

Upon completion of the training all training participants received the materials needed for a fieldwork, such as:

* CAPI device;
* Guideline for the administration of the survey questionnaire;
* List of sampled farmers;
* Survey related documentation (official letters, sample frames, etc.);
* Two hard copies of the questionnaire.

# **2.5. Farmers’ Survey Quality Control Activities**

Fieldwork quality control will involve two main components: CAPI based quality control and repeated interviews. As the fieldworks will be implemented using CAPI technology, quality control team will perform quality control process simultaneously. CAPI based quality control will provide following evidence on the fieldwork implementation process:

* GPS mapping of the interviews parallel to the field visits;
* Registration of the duration of each interview;
* Timeline mapping will provide exact route of each enumerator on the sites (in some remote areas due to the poor internet coverage interviews will be conducted offline and later uploaded on the server. For such cases timeline mapping will not be complete);
* Device manager will inform quality control group with detailed information on the location of each enumerator, process of the interview and overall field implementation.

Parallel to the fieldwork, repeated interviews will be conducted with the randomly selected poll of respondents based on the specially designed quality control forms – mini questionnaires. Repeated interviews will provide information on the accuracy of the data gathered during the actual interviews and will inform the project on the challenges of the data gathering. Questionnaires of all interviewers involved will be controlled.

On the basis of quality control results, the quality control teams will identify and amend gaps in the fieldwork implementation process. Identified mistakes will be corrected by re-contacting the respondents via phone or repeated field visit. Once fieldwork activities are completed, quality control results will be summarized and reported to the project manager.

**3. VET Graduates’ Survey**

# **3.1. VET Graduates’ Objectives of the survey**

Overall goal of the VET graduates’ survey is to assess to what extent, if any the project activities influences graduates’ decision to apply improved agricultural skill and gained knowledge and/or recommendations in practice and overall satisfaction with the program. Accordingly, VET graduates’ survey will gain information on:

* VET graduates’ profile;
* Education and employment record;
* Satisfaction with the VET programs;
* Future professional plans;
* Etc.

**3.2. VET Graduates Survey Technique and Instrument**

In order to address research objectives ACT uses quantitative survey methodology particularly, telephone interviewing with CATI (Computer Assisted Telephone Interview) technique as a data collection mean.

Draft version of the graduates’ survey instrument has been elaborated in close cooperation with UNDP and program stakeholders. Before initiating fieldworks pilot study of questionnaire has been conducted in order to test the draft questionnaire together with the whole process of the fieldwork. In scopes of the pilot survey 10 interviews were conducted VET graduates.

Final version of the survey instrument has been elaborated based on the pilot study results and in cooperation with UNDP team (See annex #3: VET graduates’ questionnaire).

# **3.3. VET Graduates’ Sampling Design**

Sample frame for the survey is represented list of VET graduates’ who have completed agricultural modular programs in target VET institutions in 2014-2016 years. Namely, UNDP provided survey team with the full list of the VET graduates of six target VET institutions for further processing and application.

At initial stage of the survey implementation ACT database team together with sampling expert conducted preliminary processing of the graduates list. Specifically, list of the graduates of the six institutions were unified and checked whether all cases were unique or information needed for fieldwork implementation was included in the database. As result of preliminary analysis final cleaned dataset of VET graduates was created and handled to field department for further processing (See annex #4: VET Graduates’ Sample Frame).

The table below shows allocation of the sample frame among different VET institutions:

**Table #2. VET Graduates’ Survey Sample Frame**

|  |  |
| --- | --- |
| **VET College**  | **N of graduates in the dataset** |
| Aisi (Kachreti) | 114 |
| Erkvani (Racha) | 80 |
| Iberia (Kutaisi, Bagdadi) | 121 |
| Opizari (Akhaltsikhe) | 200 |
| Prestige (Telavi) | 161 |
| Sh. Meskhia (Zugdidi, Senaki) | 78 |
| **Total** | **754** |

During the pilot study field work team identified problems related to the consistency / relevancy of contact information included in the dataset; namely, significant number of phone number were not active, or the owner was different from the person identified in the list. Considering above mentioned and the survey teams desire to achieve high representativeness of the survey sample and high response rate enabling analysis of the data on college and specialization levels, it was decided to use the full list of the graduates for the survey purposes.

CATI team was handled full list of the graduates with the instruction to interview every person who agreed on the interview during the course of the fieldworks.

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# **3.4. VET Graduates’ Interviewing Process**

In frames of the VET Graduates survey fieldworks will be implemented through CATI (Computer Assisted Telephone Interview) system. Accordingly, ACT involves well trained and experienced call center team in this process. CATI team comprises of following position:

* **CATI manager** responsible for the development of implementation plan, staff mobilisation and monitoring of the process;
* **Call canter technical assistant** responsible for proper functioning of the CATI system;
* **Interviewers / operators** responsible for reaching out respondents and conducting the interviews;
* **Revision and logical control specialists**, responsible for the revision of completed interview dataset;
* **Coding specialists** responsible for coding open-ended answers in completed interviews;
* **Quality control team** responsible for calling a randomly selected small sample of survey respondents in order to check interviewer performance.

ACT database team developed special script for CATI system based on the questionnaire prepared by analytical team. CATI operators received training on completion of the survey questionnaire in CATI software together with project related issues. Namely, training consisted of following topics:

* **Survey theme (goals and objectives)**
* **Survey instrument**
* **CATI software**

# **2.5. VET Graduates’ Survey Quality Control Activities**

Fieldwork quality control of VET graduates survey involve two main components: CATI based based quality control (repeated interviews) and random checks of the completed interviews:

* 20% of respondents will be re-contacted and repeated interviews will be conducted with the randomly selected poll of graduates based on the specially designed quality control forms – mini questionnaires;
* 30% of the interview records will be checked by CATI quality control manager in terms of length of interview, sequence of questions and consistency of the answers with the database.

On the basis of quality control results, the quality control teams will identify and amend gaps in the survey database through re-contacting the respondents via phone. Quality control results will be summarized and reported to the project manager.

**4. Data Handling and Processing**

Data logical control and revision: According to ACT procedures, all completed questionnaires are reviewed by field supervisors before uploading on the server. In case of any missing information or inaccuracies identified interviewer revisits the respondents to fill or recheck their answers. After completion of the initial revision process questionnaires are uploaded on ACT central server.

Following the primary revision of questionnaires in the regions, logical control/revision of questionnaires are performed in Tbilisi office. This process is performed by specially trained logical control and revision specialists. 100 percent of questionnaires will go through the logical control and revision process.

Coding of the Questionnaires: After logical control and revision of questionnaires, coding of open-ended questions is performed. All verbatim answers are entered in a codebook. After completion of coding process, the codebook is translated in English. In scopes of this particular project two separate codebooks will be prepared: (1) for farmers’ survey and (2) for graduates’ survey.

Data Cleaning: Two database specialists will work independently on the farmers’ and graduates’ survey data cleaning in close coordination with project manager. Logical-arithmetical cleaning of database is being performed using SPSS template procedures and the syntax language. ACT will perform the data cleaning, including logical checks on the validity of responses and manual reconciliation of data entry errors.

The data cleaning procedure identifies and corrects the following types of errors:

* Skip error;
* Revision/coding errors;
* Registration errors;
* Data omitted from questionnaire or database

Cleaning process implies verification of the whole file by the database manager, checking the links between the variables, logics of the data entry and validity of the database in general. The database manager actively cooperates with project manager and data logical control and revision team in the data cleaning process.