



## **EC/FAO Programme on Information Systems to Improve Food Security decision-making in the ENP East Area**

[www.foodsec.org](http://www.foodsec.org)

### **On-the-job training Farm Data Monitoring System 5-23 June 2011**

#### **Background**

The objective of the EC/FAO Programme on linking information and decision-making to improve food security in Azerbaijan is to contribute to government's efforts on improving the performance and competitiveness of agriculture, in particular of small and medium farms, as a part of the government's strategy to diversify the economy with the development of non-oil sectors. This will be achieved by enhancing the capacity of targeted national institutions to collect, analyze and use relevant statistics and analyses to support food security policies and interventions.

The establishment of a country-wide Farm Data Monitoring System (FDMS) is one of the two priority areas of intervention identified in the country by the EC/FAO Programme in collaboration with stakeholders.

FDMS will provide a basis for analysis and assessment of profitability and production efficiency on farm level with the possibility to provide advice to improve productivity and profitability or production. Furthermore, based on the analyses of collected data, decision makers and policy analysts will have the possibility to assess the competitiveness of Azerbaijani farm products on international markets as well as the effectiveness of implemented policy measures.

FDMS is operated by the Research Institute of Economy and Organization of Agriculture (IEOA) under the supervision of the Ministry of Agriculture (MoA); its Farm Data Unit (FDU) is responsible for the coordination of farm data collection, management and processing of collected data. Main outputs of FDU will be production of analytical reports for policy purposes needed by the Government and Ministries as well as the dissemination of information for the needs of advisory services.

#### **Objective**

Provide on the job training to FDU in data processing, retrieval and management, including agreement on the final version of the software, establishment of procedures for data confidentiality and security.

#### **Process**

The full data collection and data processing system was reviewed and on-the-job training was focused on the weakest points. All English-speaking staff of FDU took part in the intensive training and some important parts were translated to the non-English speaking staff. The training was given by Mr. Csaba Pesti from the Research Institute of Agricultural Economics in Hungary.

On the job training was focused on basic database competencies (physical structure of databases, records, fields, primary keys, linking tables, preparing queries and crosstabs) and basic MS Access and MS Excel skills. During the training good and bad examples of FADN software from Hungary and Kosovo were explained in details and the adaptation of best practice to FDMS was discussed.

**Figure 1. Training at IEOA focused on database structure of FDMS**



## **Main results**

During the training the previous FDMS software was tested. After fine-tuning the software worked and was reviewed in details. The input comes from Excel spreadsheets, which makes data input vulnerable. The data is stored in MS Access; database structure is coded into the software. This means that the software cannot process any changes in the questionnaire and the software can only make minimum-maximum data quality checks. Other checks like cross-checks between tables and coherence checks are not possible. Database structure of software was not properly designed for FDMS, queries are difficult and takes a long time. Programmers are no longer available, software developer's documentation is missing, and software cannot be modified. Current software is neither flexible, nor user friendly and data processing with this software is not possible.

## **Follow-up activities**

As current software cannot be used, there is a need for new SQL-based software. A full specification of new FDMS software was prepared and FDU staff was involved in the preparation of the software concept. Variables are not coded in current FDMS software; coding was prepared and explained to FDU staff together with the physical database structure. The ideas of software architecture came from the Hungarian FADN software, which was developed one year ago. Software specification was introduced to four software companies in several meetings, questions were answered, and they will provide price offers in two weeks.



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### **Data collection Farm Data Monitoring System 5-23 June 2011**

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Current coverage of FDMS is limited to only three regions of the country (Khachmaz, Aran and Lenkaran). In each region FDU staff randomly selected 100 farmers (300 in total) who participate in the farm record keeping. Data collection for 2011 accounting year began in May 2011, preliminary and non-representative results will be available in the beginning of 2012.

## Objective

Review the process of data collection in two of the three regions (Aran and Lenkaran) where data for FDMS is collected.

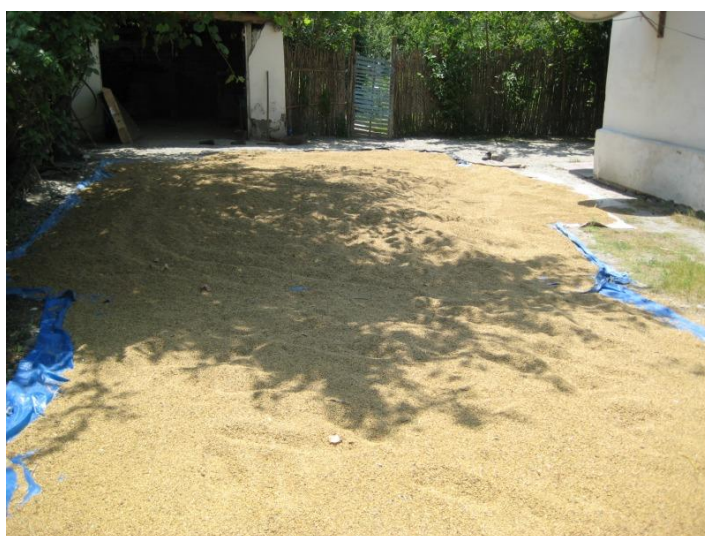
## Process

Data is collected by the regional FDU staff with two data collectors in each of the three regions. All regional staff was working for the Farmer Advisory Centers (FAC) located in their regions established by the World Bank's Agricultural Development and Credit Project. By June 2011 FAC provided free extension service to farmers and it was aimed to transfer to a sustainable fee-based consultancy. All data collectors are agricultural engineers and perform data collection as a part-time job. In Lankaran they now work as private consultants in agro-techniques.

**Figure 1. Reviewing the records of a crop farmer in Goychay rayon**



**Figure 2. Drying barley after harvest in Goychay rayon**



Data collectors are now establishing their own network of farmers who are willing to pay for extension service. Therefore, they use FDMS as a possibility to reach farmers and build their own network for extension service. In Lenkaran the technical and managerial knowledge of farmers is far above the average. All farmers register their costs and incomes on their own, they are able to fill in the main books and co-operate with data collectors. In Goychay only 10 to 15 per cent of farmers keep records and are able to fill in the main books on their own. All data collectors, who visited the two regions had “deputy” data collectors, who help them recruit and visit farmers and work for free. Data collectors have a monthly salary of 130 AZN; petrol and phone costs are not reimbursed.

## Main results

As a lot of farmers do not keep records at all, so there is a need for monthly visits. Although, the costs of data collection are not covered by the salaries, data collectors can still do their jobs, especially those who are involved in private fee-based extension service. However, it is not sustainable, without financing all costs of data collection it can only work in the first few years. In the future, instead of monthly salaries, a payment according to the number of farms is recommended.



**Figure 3. Strawberry farm in Lenkaran rayon**



**Figure 4. Tomato farm in Sercuvar village**



**Figure 5. Discussing log-books with farmers in Sercuvar village**



**Figure 6. Tomato farmer and his successor in Aran region**



## **Follow-up activities**

At present stage, FDMS results are not representative to the Azerbaijani agriculture. FDMS results only refer to those 300 sample farms, which were randomly selected by the data collectors in the three regions. There is a need for defining a *representative set of sample farms* covering all regions in Azerbaijan. Both sample size and distribution of sample farms among regions, farm size and farm type categories are to be determined following the approach of Farm Accountancy Data Network (FADN).

The sample size and sample distribution can be defined on the basis of *farm level structural data* (hectares of crops and livestock numbers) of the *agricultural census* and *prices/yields/outputs* of agricultural products. During the meeting at SSC data structure of agricultural census was reviewed. SSC has the population data needed to define farm typology and to estimate representative sample size. Technical specification of the data format needed for typology and sample design was discussed and prepared with Country Coordinator. IEOA is requesting data from SSC on the basis of technical specification.

#### Steps of representative sample design:

1. Defining of Standard Output coefficients (Production value for crops per hectare, for livestock per head without subsidies) for all products given in the agriculture census in 2005;
2. Modifying and simplifying the algorithm defined in EU Commission regulation 1242/2008. The programme code is available in most EU member states. Only the product lists need to be adopted according to the structure of Azerbaijani agricultural census;
3. Running the typology code, determining farm size and farm type for each farm in census;
4. Farm size: determined on the basis of total standard output of the farm, expressed in AZN;
5. Farm type: determined by the relative contribution of different agricultural products to the total standard output of the farm;
6. Determining the lower threshold of sample farms by analysing the distribution of farm size in the census;
7. Creating cross tables from census data using regions, farm size and farm type categories;
8. Calculation of accurate number of sample farms in each category;
9. Calculating weight numbers for each sample farm. With these weight numbers FDMS results represent the universe of farms in Azerbaijan.