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AZERBAIJAN COMPETITIVENESS AND TRADE (ACT) PROJECT

Third Mission Report on Dairy Development

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22 September 2011 – 06 October 2011

This publication was produced by Sibley International LLC, for review by the United States Agency for International Development.

Prepared for the United States Agency for International Development, USAID Contract Number AID-EEM-I-00-07-00003-00, Task Order # AID-112-TO-10-00002

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Acronyms

ACT	Azerbaijan Competitiveness and Trade Project
AI	Artificial Insemination
AZN	New Azeri Manat
AIM	Agro Information Center
BDS	Business Development Service Providr
CF	Crude Fiber
CP	Crude Protein
DMI	Dry Matter Intake
EE	Ether Extract
FAO	Food and Agricultural Organization of the United Nations
GDP	Gross Domestic Product
GoA	Government of Azerbaijan
GIZ	German International Cooperation
JAC	Janub Agrobusiness Center
LN	Liquid Nitrogen
LRI	Livestock Research Institute
MCC	Milk Collection Center
MCP	Milk Collection Point
ME	Metabolizable Energy
MOA	Ministry of Agriculture
MT	Metric Ton
NFE	Nitrogen Free Extract
NGO	Non-Government Organization
SSC	State Statistical Committee
SVD	State Veterinary Department
UMID	Humanitarian and Social Support Center
USAID	United States Agency for International Development
USD	United States Dollar
VAT	Value Added Tax
WB	World Bank

1. Introduction

The third mission on dairy development, which took place between 21 September and 6 October 2011, focused on the same two major aspects in the previous mission:

- Stimulating the main dairy companies to cooperate in their efforts to strengthen the development of the dairy sector, and
- Capacity building of extension agents and service providers, this time on the preparation of technically sound and attractive plain language guides.

During the **first mission** in March 2011 the dairy sector was studied and recommendations for further development were formulated. It was pointed out that the quite sudden increase in processing capacity would lead to a higher demand for raw milk, but not necessarily to higher quality or production. Some form of coordination and cooperation would be needed to agree on minimum standards for raw milk, to stimulate investments in dairy farming and to develop a dairy policy which reflected the needs of the sector.

During the **second mission** a first meeting with most of the leading dairy companies was organized with aim to see if there was a shared interest in discussing constraints and opportunities together and to identify priorities for further action. It turned out that even though all companies are clearly aware of the fact that they have to compete, not only for raw milk but also for their retail markets, they face common problems which need to be addressed together. Poor raw milk quality and very small quantities per farm, unfair competition from unlicensed processing units and open sales, lack of investment support and insufficient involvement in dairy policy formulations, emerged as the main issues to be given further attention.

A start was also made with capacity building of extension staff and service providers. During the two courses that were conducted on Feeding Management (Agjabedi and Lankaran) it became apparent that most advisors can benefit from new knowledge and a practical approach towards dairy farm management. The positive response from the participants further indicated that they were eager to receive new information. During the second mission we also received some training material on dairy production that was developed by AIM and JAC. It was clear these papers needed to be re-written if they were to be of any practical value.

The **third mission** built further on the previous activities: the planned roundtable meeting between milk processing companies and government representatives took place and a training course on producing plain language guides was conducted for selected service providers. New leaflets, written as part of the contract for the first project year, were reviewed based on their technical merits and presentation.

The next pages provide a description of the activities that were carried out during the third mission and recommendations for further project implementation. The need for training-of-trainers remains fully valid and should be continued. The cooperation with the main milk processors and government is also considered of utmost importance, but needs full commitment of all key-players. This commitment needs to be re-assessed.

2. Roundtable Meeting

In May 2011 the Project brought ten leading dairy companies (covering around 90% of the formal milk processing capacity in Azerbaijan) together to discuss the main challenges in dairy development and assess the areas in which they would be willing to work together. It was confirmed that raw milk quality was a concern for all processing companies, but an even larger concern was the 'unfair' competition from local processing workshops. The small processors purchase any kind of milk and operate without any quality control or government standards.

The participants all felt that the government should have much stricter control on informal markets and open sales. It was agreed that the next step would be the organization of a roundtable meeting with government representatives. In preparation of that meeting, discussion papers were circulated to further define the topics and contents for discussion. The previous mission report provides detailed information on the challenges and opportunities in the dairy sector.

Responses came from two leading dairy companies that fully supported the conclusions of the meeting and the proposed topics for discussion. From the other companies it proved to be more difficult to obtain a written response. Nevertheless it was felt that the second step, a meeting between government and dairy industry, should take place.

Invitations went out to all the leading dairy companies and to the ministries of agriculture, economic development and health. Representatives of the Standardization Committee were also invited to attend the meeting on 4 October. This time the approach was slightly different; after a short presentation, the participants were to be divided in small groups and discuss four relevant questions.

- Who are the future milk producers: households, family farms and/or large-scale enterprises? And how do we reach this objective?
- How can we ensure better food safety and prevent unfair competition from unlicensed processors?
- There is a lack of well-trained and skilled professionals in the dairy sector. How do we solve this?
- Should we establish a platform for dairy development (government and industry) to advise on policy?

The answers were to be presented by the group leaders, followed by discussion and conclusions.

Large scale or small family farms: what is the best option for dairy development?

Unfortunately only four dairy companies were able to attend the meeting, while the ministries and the committee all had one or more representatives. This allowed only for two discussion groups and limited feedback from the dairy industry. Nevertheless some conclusions on direction could be drawn, but clear answers on how to achieve these targets were not provided. The invitation, presentation and minutes of the Roundtable Meeting have been attached to the report as Appendix 2.

The question now remains if there is not enough support from the industry to work together on the issues that affect all of them or if the poor participation was a coincidence or unfortunate timing. The outcome of this question will have to determine the role of UDSAID/ACT in this process.

3. Capacity Building

3.1 Review of Available Extension Material

During the previous mission extension material from JAC was briefly examined and a handout on dairy production and three workshop manuals from AIM were reviewed. It became clear that the extension papers needed improvement to make them of practical value for either households or professional farmers.

At the beginning of the present mission translations of handouts produced by JAC and AIM under the USAID/ACT contract were submitted for review. Both organizations had been quite active, resulting in a substantial number of leaflets:

- The use of animal products, veterinary-sanitary measures and livestock diseases
- Cattle breeding is non-waste field
- Feed and proper feeding intensively impact the productivity more than type and species of the animal
- Cow must calf every year
- Recommendations to farmers and individuals
- Let's produce healthy cattle
- Brucellosis
- Holstein Friesian
- Brown Swiss
- Simmental
- Holstein crosses
- Zoo-technical rules for milk production
- Impact of mastitis on milk quality
- The factors affecting milk quality
- Feeding milked animals

The translations were done quickly and not necessarily of the best quality, which made it more difficult to judge the quality of the leaflets, but it was clear that none of the leaflets was good enough to be distributed. The main shortcomings are:

- Technical information not (always) correct or clear

- Too much information, without proper logic or priorities
- Not adapted to the target group (irrelevant information)
- Presentation of information and design below standard

The planned course on producing plain language guidelines (printed media) was certainly justified. No leaflets should be printed and distributed without being thoroughly reviewed and approved by USAID/ACT. In addition further technical training on dairy production is needed, as the knowledge of many of the advisors is still based on outdated Soviet-time information. If farmers are to benefit from the USAID/ACT support, the BDS-staff has to be able to provide relevant and technically sound advice.

3.2 Training Course on Producing Printed Media

It was decided to organize the two-day course on producing printed media at the ACT-office in Baku, as this could then be combined with some administrative issues. The participants came from different service providers (JAC, AIM, UMID, GMC, ARAZ and BIC) and covered all agricultural sectors.

The program consisted of a presentation on producing extension packages and printed media, after which the participants were divided in four groups of two persons each. Each group selected a topic on which they were going to develop a leaflet, following the approach below:

- Preparation: objective, target group and approach
- Structure: what to write and in which order, general structure
- Actual writing of the main text
- Improving readability
- Design and completing final draft

After each step the participants were asked to present their ideas and where necessary adjustments were made in approach or contents. The four groups covered the following topics:

- Aquaculture: promotional leaflet on the two associations involved in aquaculture;
- Fruits: advantages of changing from traditional to modern systems of apple production;
- Dairy: promoting proper milking routines and milk handling;
- Dairy: feed and fodder production and feeding management.

All participants received a training manual with information on producing extension packages and printed media (see Appendix 3) to help them with the preparation of the leaflets. It was expected that 2 days would be enough to complete at least one leaflet with each group, but this proved to be a bit too optimistic. The participants did their best, but the creative process took more time and energy than they could muster.

The main text for three leaflets (milking routines, apples and aqua) was almost ready, but needed further improvement. This was done for the leaflet on milking routines, but we are still waiting for the final drafts on apples and aquaculture. The leaflet on feed and fodder turned out to have the wrong message and has to be re-written.

The leaflet on milking routines reached the final design stage, but other leaflets are still to be completed.

One course on producing plain language guides is not enough to give the service providers sufficient practice and skills to continue without further support. The limited writing techniques in combination with the lack of modern technical know-how make it difficult for the service providers to meet the required standards.

3.3 Development of AI Training Program

The results of the surveys on artificial insemination were submitted to USAID/ACT as part of their monthly reports. The presentations of the results varied for JAC and AIM, but both came to a similar conclusion; many farmers are not satisfied with the quality of AI services. It is not always easy to identify the exact cause for repeated inseminations (e.g., skills of the inseminator, semen quality, time of insemination and heat detection) and a combination of factors may play a role. Refresher training of inseminators, in combination with information to farmers on heat detection and reproductive management will be needed to improve the services. In addition there are areas where these services are not available, but could be introduced. The surveys did not yet include information on these new areas (location, number of breedable animals, potential candidate for training and AI services). Especially in those areas where raw milk is collected by formal dairy plants an expansion of AI services is needed as this will help to improve the genetic quality of the dairy cows and thus their milk production.

After the identification of candidates, the planned training programs on artificial insemination can be implemented. The first course was scheduled for mid-September, but this will now have to be postponed to a later date.

The proposed courses will have a duration of one week will cover both theoretical as practical training. At the end of the course a final examination determines if the trainee has the proper skills to work as an inseminator. As practical skills are essential, each course should not have more than 6-8 participants. This also means that live animals are required for practical exercises. The suggested course content was already attached to the previous report.

Two organizations were asked to submit a program, budget and CV of their trainer (AIM and the Norwegian Humanitarian Enterprise) as they already are involved in the provision of AI services and have organized training courses in the past. Obtaining CVs and information took longer than anticipated, but could be evaluated during the mission. The AIM program did not meet the required standard (more a demonstration program than practical training) and NHE, as an international NGO would face problems with tender procedures. It was therefore agreed that the project will hire two independent local specialists: one to revise and digitalize the training manual and one to conduct the courses. AIM will be asked to assist with the logistics needs and organization.

A qualified trainer was identified, Mr. Nariman, and the conditions for training were discussed. Mr. Nariman will submit his CV for approval and then follow the administrative procedures. A qualified specialist for the training manual still has to be identified. First the manual must be ready and the trainees have to be selected, before any training can take place.

Mr. Nariman, one of the most experienced inseminators in Azerbaijan in action.

4. Next Steps and Recommendations

In earlier reports we mentioned that dairy development is a process which takes time and a consistent approach. The ACT/USAID project has developed its action plan and is now in the process of implementation. This process is based on the inputs of the selected service providers, JAC and AIM, international expert support and the ACT dairy development specialist. The main approach and objectives are:

- Enhancing the cooperation between key-players to become a reliable partner for the government on dairy development policy and to define common approaches towards the increased production and higher quality of raw milk; and
- Capacity building, mainly through the training of trainers (farm advisors and veterinarians, either working for a BDS or processing plant).

The previous missions were the first steps on the planned road and it is too early to see any measurable achievements. The roundtable meeting gave some conclusions, but without active participation of all stakeholders the main objectives will not be reached. We will have to obtain feedback from these stakeholders before we decide if this approach has a chance of success.

The training-of-trainers has to continue and this should be done on a regular basis. On each of the aspects of dairy husbandry technical training is needed, while at the same time training on extension methods should be conducted. This can be done through more workshops and short courses. On written information support can be provided through e-mail (as a backstopping service).

The two project directions -structural dairy development and practical assistance to farmers- are complimentary and still the most desired approach. This approach's success depends on the commitment of the stakeholders and the efficiency of project implementation.

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List of the participants for the workshop on Options for Dairy Development conducted by ACT

Date: *04 october , 2011*
Venue: *ACT office, Baku*

Moderator: Elnur Sofiyev-VCs
Presenter: John Bonnier-STTA

#	Name	Firm	Contact info	Type of organization	Signature
1	İzimov Saig M.O.	Kənd Təsərrüfatı Nazirliyi	498-16-38		[signature]
2	Abdullayev Ju[illegible]	Səhiyyə Nazir,	323-61-24.		[signature]
3	Asəf Mamazov	"Bilasuvar Agro"	(050) 212 57 46		[signature]
4	Səidə Məmmədova	Milk-Pro MMC.	050 5352253		[signature]
5	Məmmədov Emil	GILAN Holding	055 2737007		[signature]
6	Çobanov Rəşid	Bayat süd	055 296 4949		[signature]
7	İbrahimov Elgin	Azərbaycan Respub. İqtisadi İnkişaf Nazirliyi	050. 368 63 92 012 598 18 37		[signature]
8	Hasanov Javid	Ministry of Economic Develop	498 66 87		[signature]
9	Məmmədova Vəfa	Standartlaşdırma Metrologiya və Patent üzrə Dövlət Komitə	4499959		[signature]
10	Hümbətov Samir	İqtisadi İnkişaf Nazirliyi Sahibkarlığa Kömək MMC Fondu			[signature]
11					
12					

Annex 1

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AZERBAIJAN COMPETITIVENESS AND TRADE (ACT) PROJECT

List of the participants for the training
on Preparation of Plain Language Guides (Leaflets and Posters)
conducted by ACT

Date: 29-30 ***September, 2011***
Venue: ***Baku - ACT office***

Trainers: John Bonnier
VCs: Elnur Sofiyev

№	Name	Organization and position	Contact phone and email	Signature	
				29 sept.	30 sept.
1	Zohrab Zohrabov	UMID - Program coordinator.	050 324 85 11		
2	Ahmad Aliyev	UMID - Specialist	050 220 56 75		
3	Yashar Iskandarov,	AIM, ACT project-Coordinator	050 223 46 82		
4	Solmaz Adigozelova,	AIM Head Trainer	050 646 56 82		
5	Sabir Muradov,	AIM ACT project - Trainer	051 720 77 62		
6	Mobil Pejaliyev	JAC- Director	050 626 26 88		
7	Kheyraddin Jabbarov	GMC- Director	050 225 92 50		
8	Azad Bahaddinov	GMC- specialist	055 638 37 53		
9	Bahram Osmanov	BIC-Director	050/055 225 95 40		
10	Lutvali Zeynalli	ARAZ -Director	050 223 46 82		
11					
12					
13					
14					

Annex 2

Conclusions of the Roundtable Meeting

Date and location: 4 October 2011, ACT Office, Baku

Participants:	Asef Namazov	General Manager Bilasuvar Agro Dairy Plant
	Saida Mamedova	Quality Manager M-Pro Dairy Plant
	Emil Mammadov	Gilan Holding
	Cobanov Rufid	Salyan Dairy Plant
	Hasanov jamid	Ministry of Economic Development
	Azimov Shaig	Ministry of Agriculture
	Abdullayev Imran	Ministry of Health
	Ibrahimov Elchin	Ministry of Economic Development
	Mammadova Vafa	Committee on Standardization and Metrology
	Humbatov Samir	Ministry of Economic Development
Unable to attend:	Zeki Aschi	General Director Pal-Sud Dairy Plant
	Cem Kurt	General Manager Atena Dairy Plant
	Shucaet	Barda Dairy Plant
	Fayat Ugur	General Manager Azersun Dairy Plant

The meeting started with a word of welcome by Melani Schultz and a short round of introductions, as not all participants knew each other. Then John Bonnier presented 'Options for Dairy Development' in which he summarized the points discussed during the previous roundtable:

- The need for more milk per cow and farm to reduce milk collection costs and improve profitability for farmers and processors;
- The need for better raw milk quality (composition and biological quality) to meet international standards and compete successfully with imported dairy products;
- The need to get a more balanced supply of raw milk throughout the year in order to meet market demands.

The presentation was concluded with four discussion points:

1. Who are the future milk producers: households, family farms and/or large-scale enterprises? And how do we reach this objective?
2. How can we ensure better food safety and prevent unfair competition from unlicensed processors?
3. There is lack of well-trained and skilled professionals in the dairy sector. How do we solve this?
4. Should we establish a platform for dairy development (government and industry) to advice on policy?

The participants were divided in two groups and each group discussed each of the four questions and presented its conclusions. On all major aspects of dairy development there appeared to be a common view:

1. The priority appears to go in the direction of large-scale farming, although all participants confirmed that the smaller producer should not be forgotten. A possible option is the development of family farms or small/medium cooperatives (combining land and cattle).

   Larger enterprises are in a better position to obtain services and inputs, hire qualified management and staff and are easier 'to control' by the Ministry of Agriculture. A code on the management of coops is under preparation and tax exemption for dairy farm development on certain inputs is provided as government support.

   A clear answer on how the objectives of farm development are to be reached was not provided.

2. Small, unlicensed processing units should not be allowed to continue operation. The future is with the larger, modern dairies that meet international standards (HACCP, ISO). Azeri laws are to be harmonized with EU legislation (end 2012), after which it will be easier to introduce a stricter quality control. Under the present laws HACCP is not required.

   In principle each household producing and selling milk is a potential risk for food safety. Their animals may suffer from contagious diseases (e.g. Brucellosis, Tuberculosis) and their milk can be contaminated with unwanted substances. At present there is no or insufficient control.

   'Ivanovka' in Ismailly was checked by the department for food inspection and their license for cheese production was taken in as they did not meet the required standard (note JB: Ivanovka is one of the oldest and better managed farms in Azerbaijan).

Both the Ministry of Health and the Ministry of Agriculture (Veterinary Inspection) are involved in food safely control, each with hits own role. The Committee of Standardization presently reviews the new standards for raw milk quality.

An awareness campaign has been launched to encourage consumers to buy branded and controlled dairy products.

3. Both groups confirmed that there was a (great) need for professionals in the dairy sector. The government should invest in modernization of the formal education (Ganja University, Research Institute), while the private sector could also organize training for its own staff (large-scale farms).

4. In principle the Ministry of Agriculture and the Ministry of Economic Development are responsible for the formulation and implementation of agricultural policy. However, there is room for cooperation with the private sector. The poultry sector is well organized and takes part in the discussions on policy. The dairy processing industry has an association, but with little vision and influence. Farmers are not organized at a level that they can be represented properly.

   The Confederation of Entrepreneurs is an organization that gives individuals an entrance to discuss their problems with government, but this organization is not suitable as a discussion partner for agricultural sector related issues.

At 13.00 hours the meeting was closed, however without a clear agenda for follow-up activities. It was a pity that several of the leading dairy companies could not attend the meeting. We will have to ask ourselves if there is enough interest among the key-players to work together on those issues that concern the whole sector and which require regular communication with the various ministries. We will also have to see if ACT can make a contribution in this process or if the project should shift its focus to support extension providers and field services only.

Annex 3

GUIDELINE

for the development of

EXTENSION PACKAGES

1. Introduction

The only tool an adviser has to support the farmers in solving their problems is communication. Fortunately communication consists of more than only words. Besides discussions with and among farmers an adviser can use brochures, slides, a radio program, field demonstrations, etc.

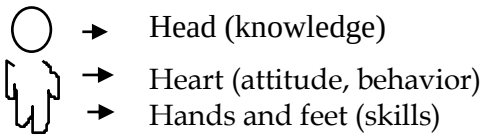
A technical extension package consists of a combination of different extension tools, which an adviser can apply when s/he implements different extension methods. By using a mix of extension methods we can exploit the advantages of each method and fill up the disadvantages of one method with the advantages of another method.

2. Extension and Extension Methods

An adviser can influence whether the message reaches the farmer by choosing the right extension method or mix of methods.

An adviser aims with his messages to

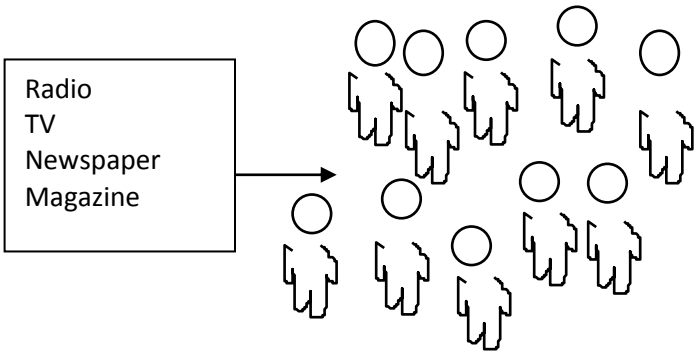
- Create awareness,
- To enlarge knowledge,
- To improve skills and/or
- To change attitude and behavior



The adviser transmits the extension method to the farmer by using different extension methods. Extension methods can be divided in three categories, according to the number of people reached. We distinguish mass extension, individual extension and group extension.

Mass extension

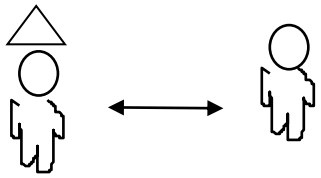
Mass extension is done through mass media, for instance television, radio, newspapers and magazines. The main characteristic of mass media is the one-way communication. It implicates that the presented information must be clear and simple, because the target group is not able to clarify questions. Mass media can be very useful at the start of an extension campaign. It can create awareness with the target group and serve as an announcement for other activities. Another important characteristic is that the adviser will never be aware whether s/he reaches the people of the target group. This risk can be diminished by choosing the proper television/radio program, the appropriate broadcast time, or the right newspaper or farmers' magazine – one which is read by the target group.



- 250 – 250,000 people reached
- one-way communication
- cheap
- adviser never knows who exactly has been reached

Individual extension

Individual extension allows a direct contact between the adviser and one member of the target group (client). For an adviser it is the most intensive and therefore most expensive method to reach the target within a certain target group. S/he only can reach his target with one client, while at the same time s/he could have organized a group meeting in which s/he could achieve the objective with for instance 30 clients. Because of those disadvantages, individual extension is only efficient when there are very (farm) specific problems to solve, or problems that ask for a discrete treatment.



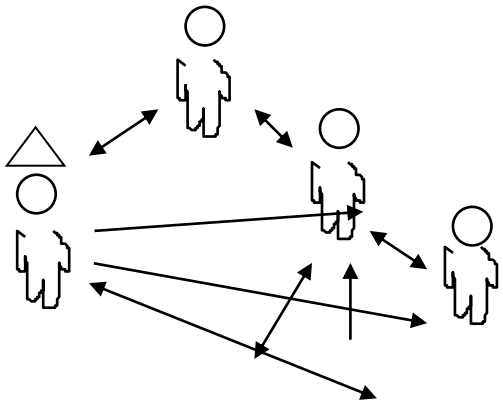
- Most intensive and expensive
- Useful for farm specific items

Group extension

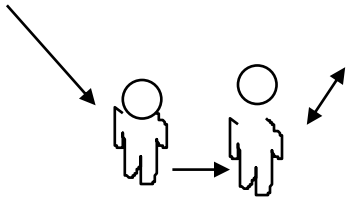
Group extension covers all the extension methods between mass extension and individual extension. This means that the group size can range from two to a few hundred. Group extension has three major advantages compared to mass and individual extension.

1. It has more persuasive power, because it allows more two-way communication with the farmers.
2. It makes optimal use of the knowledge and experience available in the group, and
3. It is cost-effective.

Obviously a method which is good for a group of ten people may not have the same effect with a group of 250 people.



- 2-250 people
- two-way communication
- high persuasive power
- optimal use of available knowledge and skills among the farmers
- cost effective



Group advice in small groups (2-20) through interactive lectures, on farm demonstrations, exchange of experience groups, excursions, etc. has the advantage that the adviser can make optimal use of knowledge and experiences within the group. This is most persuasive because farmers often believe more the advice of their colleagues rather than that of the adviser. The main role of the adviser in this case is that of a facilitator.

Group advice in bigger groups (30-250). The effect of this extension method is already more comparable with mass extension. The main difference is that farmers can meet each other and discuss and/or exchange experience among each other (without adviser). This is not the case with mass extension.

Comparison of different extension methods

Process and/or objective	**Mass extension**	**Group extension**	**Individual extension**
Creating awareness of innovation	+++	-	-
Creating awareness of own problems	-	+++	+++
Knowledge transfer	+++	+	++
Change in behavior	-	+++	++
Using farmers' language	-	+++	++
Activating learning process	-	+++	+
Adjustment to farmers' problems	-	++	+++
Cost per farmer reached	+++	++	--

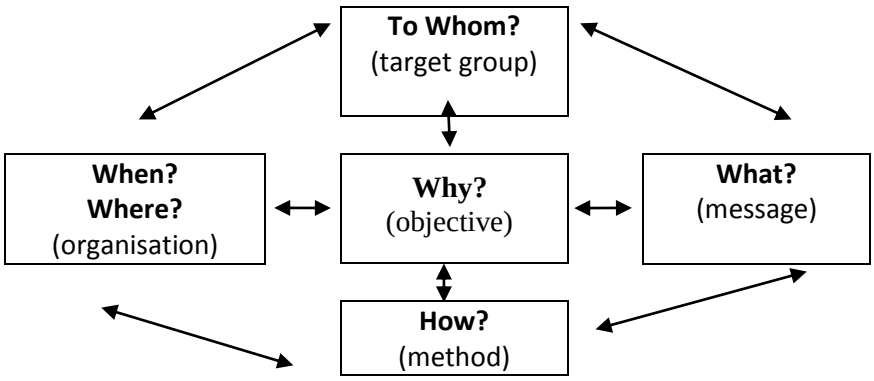
- = unsuitable/ + = suitable

3. Steps to Define a Technical Extension Package

A technical package comprises a number of extension messages. These are wrapped in different media. They will find their way to the target group through different extension activities.

To develop a technical extension package several questions have to be answered. First the objective (why?) should be clear. This objective can be reached by several extension activities. To define those activities it should be clear to Whom the activities will be addressed?, What is the content of the message?. How should the message get through the target group?, When should the activity take place? And where should it take place? The figure below shows the so-called Mill of Royen, which comprises all those questions. It is obvious that the mill only will be able to turn if the answers on the questions are connected and in balance with each other.

Mill of Royen



Let us have a closer look at all the questions in the Mill of Royen:

Why? (Objective)

The objective describes the desired future situation related to present problems. If the problem to solve is that farmers do not utilize existing market channels, the target could be that farmers increase access to marketing channels.

The objective also expresses what we do want to reach. For instance we want to reach an increased awareness of farmers' problems or about existing innovations, an enlarged knowledge, improved skills, etc. An objective can vary from farmers just understanding the message, to changing attitude and applying the messages.

The objective becomes more tangible if we translate the objective in results. Namely, if you want to know whether you reached the objective, you need measurable results. For example if the objective is ''knowledge about farm economics is increased'' the result could be ''at least 10 farmers in every village keep records for their inputs and outputs in 2000''.

All planned activities within the technical extension package have to serve the formulated objective.

For each extension activity the questions To Whom, What, How and Where/When? have to be answered. On the basis of these formulated activities the technical extension package can be prepared.

To Whom? (Target group)

The target group is the group of people the technical package is focused on.

The target group does always appear straight from the objective. Apart from a suitable analysis of the problem and the target, local knowledge is often needed to determine the right target group. If for instance the target is to teach farmers how to calculate feed rationing, the target group should especially include the women, who are milking the cows. The women know the milk yield of the cows which is important in the calculation of a ration.

If, in another example, you want to promote co-operation in using machinery it is necessary to decide on which specific group of farmers you want to focus. Farmers who are willing to set up an association but just need supplementary information, farmers who are suspicious concerning co-operation, or farmers who are not really convinced about the economic benefit of associations.

What? (The content of the message)

What should be exactly the message? What information do you offer? What does the farmer ask? What must the farmer see, hear or do? These types of questions concern the content of the message.

How? (Method)

Before choosing the method questions have to be posed and answered concerning the way the content of the message gets to the target group in order to reach the objective.

How are you going to disseminate the message? Which media will be used? It is recommendable to use a mix of methods. Some methods are very recognizable, i.e. a lecture for a group of farmers or a leaflet. Other methods may be less obvious. Although it seems that the adviser is not doing anything, farmers who discuss their problems or technical affairs within an exchange of experience group, is also an extension method.

When, Where, Who? (Organization)

Except from the technical contents the success of a technical extension package depends on the organization of preparation, production and implementation of the different extension messages and tools.

Organizational matters to keep in mind are: who will organize what, when has each item to be done, what will it cost, how to monitor the impact of each step and how is the process managed? Underneath some organizational matters are described in more detail:

- Time schedule: when has it to be done?

  It is important to prepare a realistic time schedule. Often the period necessary to prepare things is underestimated, creating a lot of stress, especially when the subject matter needs further study or advice from other specialists.

  A useful suggestion is to draw up the time schedule not only from the start to the end but also back from the end to the start. Messages that depend on the season must be filled in first. They have time restrictions. After these, the other messages or activities follow, again starting with the finishing date. For example start with the most appropriate time for the activity like fodder conservation in early summer. Then work backwards for preparation of leaflets, studies, contacting specialists. Allow enough time for study and to check contents of leaflets before finalizing. Activities that do not depend on a special season (milk recording, milk hygiene) can be planned thereafter. It goes without saying that activities related to each other should be planned in a logical order. If a leaflet is used in group-meetings, then it must be ready before the first meeting.

- Responsible persons: who is doing what?

  Duties that have to be done are for instance organizing meetings, preparing contacts with the newspapers, preparing the content of the article for a newspaper, writing leaflets, typing and multiplying leaflets; supervising and monitoring the time schedule and monitoring the budget.

  For monitoring purposes it is useful to make a table which gives an overview of who is doing what and when.

- Resources: what do we need?

  Everything needed to implement the plan must be mentioned in the resources. This applies for human resources, equipment and money (budget). The requested resources must be detailed sufficiently, so the approval can be based on arguments and the budget easily can be monitored.

- Monitoring: how is the process managed?

  For the supervision of the implementation of the technical extension package it is essential to closely follow watch the proceeding and the effect of the ongoing activities. This is called monitoring. Then possible (unforeseen) obstructions during the implementation phase can be signalized and the responsible person to take appropriate

measures. It is recommended to prepare a clear structure for the monitoring of the activities.

In summary the following steps have to be made to define the technical extension package:

Step 1: Define the objective (Why?) using the diagnostic survey. The objective describes the desired future situation related to present problems.

Step 2: Define the extension activities needed to reach the objective. Each activity comprises four essential elements: the target group (To Whom?), the content of the activity (What?), the method(s) (How?) and the organization (When, Where?). Those four elements are described in the following steps.

Step 3: Define for each extension activity the target group. Who are the people to focus on in the extension activity? The target group can be lifted out of an individual activity if it is the same for all planned activities for your technical extension package. Then it is placed directly after the objective.

Step 4: Define for each extension activity the content of the message (What?)

Step 5: Define for each extension activity how (method) the message will reach the target group.

Step 6: Define all organizational aspects. Except from technical contents the success of the technical extension package depends on the organization of preparation, production and implementation of the different extension methods. The organizational aspects include a time schedule, the responsible persons, the resources and the monitoring.

Whether a technical extension package is properly prepared may appear from the following checklist:

- Have the representatives of farmers been sufficiently involved with planning of the technical extension package?
- Is there an action plan in which time-scale and responsibilities are clearly indicated?
- Do the people involved know what their tasks are and when they need to be carried out?
- Are all activities and technical extension products to be applied well integrated with each other?
- Do the people involved have sufficient time to prepare themselves for their tasks?
- Are all the needed written and visual aids available or will they be ready in time?

4. Example of a technical package

To be developed during the workshop.

Annex 3

GUIDELINE

on

PRODUCING PRINTED MEDIA

ARTICLES, LEAFLETS, OR POSTERS

Introduction

Printed media combine words, pictures and diagrams to convey accurate and clear information. Their great advantage is that they can be studied when and as long as the reader wishes. Unfortunately printed media do not allow direct interaction. However, the written information can be a basis for further reflection and discussion between farmers (and advisers), and the beginning of study groups, demonstrations, excursions, or training workshops. Printed media used in extension include:

- articles in newspapers or in farm magazines.
- leaflets (max. four pages),
- brochures (more detailed, but max. ten pages) and
- posters (short, clear messages).

The reach of printed media can be enormous, but it has to meet a number of criteria before being effective. It has to attract attention, to be read, to be understood, to be accepted and kept in mind. Therefore they have to be made attractive in appearance and have a content that catches the interest of the reader (farmer). In general farmers are interested in subjects which:

- have direct impact on the farm management and income;
- contain new technical information;
- include interviews with people they know or can identify with;
- discuss events which happened nearby;
- successes or new developments;
- anything exceptional or out of the ordinary;
- information from an accepted and respected source.

Furthermore, written information should always be to the point, clear, in a language familiar to the farmers and addressing the farmers' problems. Make sure that your article, pamphlet, leaflet or brochure answers the 5 **W** questions (**W**ho, **W**hat, **W**hen, **W**here, **W**hy?) and **1H** question (**H**ow?).

And last but not least, the material must be attractive at first glance. Only if a leaflet or an article catches farmers' attention the farmer will spend the necessary time to look at, read and absorb the information it contains.

When preparing written information we recommend the following the steps:

Step 1: Preparation

Step 2: Structure

Step 3: Actual writing

Step 4: Improving readability

Step 5: Design

Step 6: Completing the final draft

Step 7: Pre-testing

Step 8: Multiplying and distribution

Step 9: Evaluation

Each step will be discussed in more detail on the next pages.

Step 1: Preparation

Preparation is needed to get a clear picture of your task. Therefore you start to reflect on the objective, the farmer and the approach. For instance by answering for yourself the following questions:

The objective

What do you want to achieve?

What do you expect the farmer to do with the information?

The objective can be to create awareness, to inform, to follow up earlier advice, to instruct, etc.

For example: with your information you would like farmers to use artificial insemination, or to change the feeding of their cows in a way that is more cost-effective.

The farmer

Which farmers do we want to reach?

What do they know already?

What do they want to know?

What do they need to know?

Will farmers read this written information?

For example: what is the farmers' present interest and knowledge on artificial insemination and why would he reject or use it?

By answering these questions you can include essential information in your leaflet or poster. It is useful to talk to farmers, to find out why farmers are not yet implementing the extension message. Is it lack of knowledge or are there other reasons/problems that have to be addressed?

The approach

How do you present the extension message? Are you going to:

- provide a systematic explanation,
- describe the results of demonstrations,
- give useful tips, or
- give a lot of facts, which are difficult to remember?

Do you combine the written information with other extension methods? The answer to these questions depends on the objective and the farmers you want to reach.

For example: if you expect farmers to implement a recommendation, you first have to create awareness, then make them understand the value of the new technology and then teach them how to apply it in practice. This may require a combination of posters, leaflets and workshops. You could also organize field demonstrations and make gross margin calculations of the results. These results can be included in the leaflet.

Step 2: Structure

This step concerns two questions:

- What to write and
- In which order the subjects have to be dealt with.

After answering these questions you finalize this step by making the general structure of your text.

What to write

You can decide about what to write by means of writing down catchwords or asking yourself questions on the subject. You start with the general set up and then you work out the details. The decisions you take on what to write and what to leave out are important. You have to stick to those points that really matter to the reader and explain them very clearly.

You keep thinking about the objective and the farmer/reader, while you are trying to answer the **5 W** questions (**W**ho, **W**hat, **W**hen, **W**here**, W**hy?) and the **1 H** question (**H**ow?).

Once you have defined what to write, you have to see in what logical order you present your topics.

The order of the topics

The order of the topics guides the farmer and keeps his/her attention step by step.

For example: during the preparation period you decided to write about dairy cattle feeding: how to feed your cow in a way that is cost-effective and gives the best yields. You are looking for a systematic approach. You want to emphasize why feeding is important, what the feed requirements of a cow are and how we can meet those requirements. Therefore you decide to make the following order:

- Importance of good feeding
- Basics on the digestive system of a cow
- What are the feed requirements of a cow during the lactation cycle
- What feeds are available and what is the feeding value
- How do we calculate a ration
- How do we check if the ration meets expectations in practice.

General structure

You finalize this step by making the general structure of your text. A common structure used for leaflets and technical information is shown below.

The information is intended to reach farmers, who are already interested in the topic and who look for detailed information on the topic. This structure is also used in scientific publications. Such structure consists of an:

introduction	main body	tail

The introduction should already attract the attention of the reader: he will be introduced to the topics in the leaflet. You can do this by answering at least three of the following W questions: Who, What, Where, When, Why.

For example:

What?	More milk from better feeding management
When?	At different stages of lactation, but especially around calving
Why?	Because it increases your income from dairy farming

In the main body you work out the introduction on the basis of facts and arguments, usually presented in chronological order. The order brings coherence with the different sub-subjects in your leaflet. Therefore you should pay attention to your ranking of sub-subjects, so you will not confuse the farmer/reader.

You aim at a tail, which the farmer will remember. So, finish the leaflet with a slogan, a summary or a conclusion: your main extension message.

Step 3: Actual writing

The result of the former steps is that you know what you are going to write and in which order. Now you can write your first version. You are doing this by writing paragraph after paragraph.

One paragraph contains at most one core idea. The reader prefers to see quickly what the content of the paragraph is and what the main item is. Therefore the main places for the core idea within a paragraph are at the beginning or at the end of the paragraph. These places catch the eye.

To facilitate the writing process you try to write down a first version of the text quickly and spontaneously. You only follow the content and order, without worrying too much about the correct formulation. The correct formulation is a task for the next step.

Step 4: Improving readability

Your rough text is ready. Now you are going to make a good readable text by paying special attention to the formulation. You aim at a text, which is easy to read and understood by the farmer.

Before starting with this step you may need some distance from the written text. Therefore you take a (one-day) rest, after which it is easier to make changes. You are going to improve formulations, clarify matters and remove unnecessary words or phrases.

Editors of professional journals often have to change much to make an article readable. According to editors, articles often are written too technical, formal or scientific. This editing often annoys the writer, but what about the reader?

Some points of advice:

- Write to the point using 'spoken' language. Avoid wordy, redundant or archaic formulations. Reduce the use of professional terms and give clear explanations. Try to imagine reading the article as a farmer.

Avoid wordy, redundant or archaic formulations. What do you prefer to read?

'Therefore increasing productivity of the bred cattle, improving its pedigree composition shows importance of applying the latest developments in modern biotechnologies (methods)'.
or
'It is important to use modern techniques to improve the productivity and the genetics of cattle'
Avoid professional terms such as used in the following sentence:

'Microbes in sperm form toxins and decomposition products of organic substances causing deadly impact on sperms. Increase of colibacillus in sperm leads to bonding of spermatozoids. It is important to assess sperm for quality and quantity indicators as well as existence of microorganisms'.

- Use '**quotations'**. You can quote opinions or experiences of farmers through representing (parts of) interviews with colleague farmers of the readers. This will increase the credibility of the message.
- Use the **present tense**. Past and future tense create more distance than things that happen right now.

- Try to avoid the **passive voice**.

What do you prefer to read?

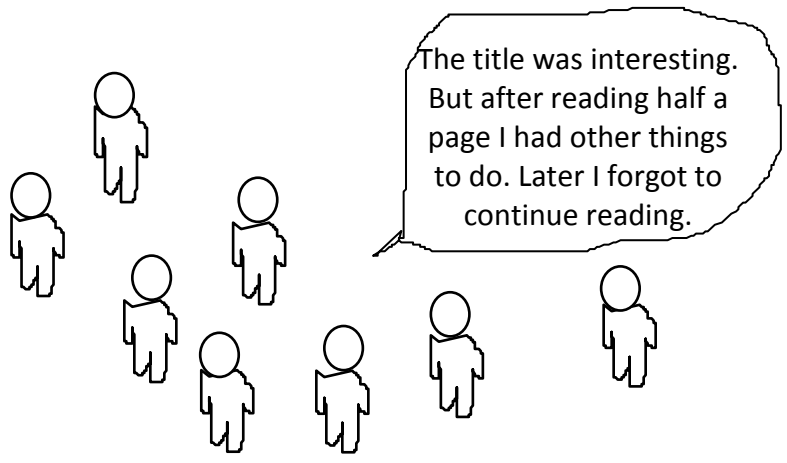
'At this moment the functioning of the warning system cannot be called optimal'
or
'At this moment the warning system does not function optimal'.

- **Try to avoid very long sentences with a lot of information**. These are hard to read. A sentence, which contains on average about 15 words which is for many people still readable. Better use two short sentences than a long one.
- **Vary the structure of the sentences**. So do not always choose the following order: 'subject-predicate-clause but try to change it. You can also use questions (?), exclamations (!) or quotes (have somebody say something between "...")
- **Keep the text as short as possible.** Realize that farmer select from the available supply of written information. Who wants to read long stories?

Step 5: Design

Your text is ready and good readable now. But is it also attractive to read?

If you did not give a title yet now it is the right time to invent an attractive title for your text. The title must be short, indicating exactly what the text is about. It should also invite to read. By using a subtitle you can add some extra information.



A proper design will contribute to make your text attractive to read. Some important aspects in design are:

- Use white parts of your pages to back up the structure. For example, make at the left side of your page an ample margin. A page with continuous lines of text without white lines is not pleasant to read.
- Use the layout for stressing words or parts of your text by CAPITAL LETTERS, underlining, *italic*, **bold**, etc. to emphasize important words or parts of your text, but do not overdo it.
- Illustrations (e.g. pictures, drawings, schemes, tables, graphics). Much information can be provided visually. One picture can replace 1000 words. It can support the text, create atmosphere and expression and it can underline essential information. Illustrations are mostly provided with a clarifying subtitle, except for cartoons.
- Boxes. These are separately outlined pieces of text with information, which the writer wants to emphasize. They are not a summary of the content, can contain interesting details about a person, project, enterprise or product.
- Make a balanced design, which supports the content. Do not make too many words bold because it seems everything is important. Or do not put a picture in your leaflet because you have it but only if it can strengthen the message.

Do not forget to design the front page. This page creates the first impression of your pamphlet, leaflet or brochure for the potential reader.

Step 6: Completing the final draft

Now you are in the final stage of writing your text.

First you are going to read the whole text critical to check if all the information you intended to include is presented in a logical sequence and easy to read and understand. You can do this yourself or ask a colleague to do it for you. This can be done on the basis of the following checklist.

- Is the structure of the text clear? Did you indicate clearly and consequently numbers and titles? Did you explain the main topics in the introduction? Do you recognize the ‘introduction-middle-tail’?

- Did you use the paragraphs well? Did you really tackle only one topic within one paragraph?
- Do the titles cover the topics?
- How long is the average length of your sentences? Can you make the sentences even shorter or more concrete?
- Do the farmers understand the meaning of the words you used?
- Is important information stressed by using the lay out, illustrations and boxes? Is this done in a balanced way?

After you have made your last changes there are some details what have to be checked and if necessary still to be prepared:

- Table of contents and page numbering
- Spelling check
- Name of the writer
- Year
- Address and telephone number to turn to for more information
- Copyrights
- Logo

Step 7: Pre-testing

By way of a pre-test you can check whether the pamphlet, leaflet or brochure reaches its goals: what is the opinion of the farmer? Does the farmer understand the message? What are his comments and suggestions? Does he find the text readable? Is the leaflet attractive? Is the message convincing? The farmer's opinion is the ultimate judgment.

Step 8: Multiplying and distributing

The pamphlet, leaflet or brochure is now ready to find its way to the farmer. Make sure that it really will reach the farmers! Timing can also be of importance (messages that are related to season).

Often the written information is used within the framework of planned extension activities and/or should be distributed at a certain time in the year when the farmer can use the information. When a leaflet on winter feeding is printed in March, the farmer cannot use the information until the next winter (and may have forgotten all about it).

For a successful distribution the following aspects should be included in the production planning of the leaflet:

- Delivery date of the text by the writer
- Date for final check after designing before printing
- Estimate of the number of copies needed
- Distribution date
- Budget

Step 9: Evaluation

Last but not least it is important to find out if the information really had the effect you had in mind. You can do this by making a mini-questionnaire for farmers from the target group, combined with critical discussions with representatives from the target group.

When preparing this questionnaire and discussion with farmers you are interested in specific effects of the technical information on farm management and in an assessment of the text itself by the farmers.

To make an effective leaflet the message should be read, understood, accepted, appreciated and implemented in practice. The following list with conditions for effective extension can be a guide to prepare a questionnaire and/or critical discussion with some farmers. Let's take a leaflet as an example.

- **Contact**: what makes farmers decide to take a leaflet with them and even read it.
    - Where did he get the leaflet?
    - Did he read the leaflet?

- Why did he read the leaflet?
- Does he still have the leaflet?

- **Selection:** which parts of the leaflet have been read and which not**.**
  - Which parts were most interesting? Why?
  - Which parts were not interesting? Why?

- **Understanding:** what has been understood and what not**.**
  - What questions does the farmer have about the leaflet?
  - What is the main message within the leaflet?
  - What other important aspects are explained in the leaflet?
  - What words are difficult to understand for farmers?
  - What were the best pictures in the leaflet and what was their message?

- **Completeness**: was any relevant information missing.
  - What information was missing? Why?
  - Should it be included in this leaflet or should another leaflet be made for it?
  - Was the leaflet too long, just long enough or too short?

- **Application**: to what extend was the farmer able to use the extension message.
  - What did the farmer implement?
  - What did the farmer *not* implement and why not?
  - What should be changed to be able to implement the message?

You can use above-mentioned questions as a guideline, but always:

- Ask clear questions, focusing on the content and objectives of the leaflet you evaluate.
- Avoid questions, which provoke social desirable answers. For example: what words didn't you understand? Of course the farmer understood everything. Better ask: what words are difficult to understand for most of the farmers?

Who to interview?

The farmers should be part of the target group, but within this group you could interview farmers who differ in age, background, education, etc. and don't forget to include women, as often they are involved in farming activities and decision making.

Finally you make a report of the results and implement changes in your leaflet.
Almere, 18 August 2011

Annex 4

Training on Artificial Insemination

1. Available budget (5.900 $ for 2 one-week courses) is not enough to cover the total costs NHE offer was 15.500 $).

2. No selection of candidates for training has yet been made and no contract with potential trainers (NHE) has been signed.

Suggested approach:

- Within the present budget year the manual for training can be prepared (existing manual needs complete revision and has to be digitalized). Qualified vet/inseminator with computer experience should do this task. To be hired through AIM (NHE might be able to provide this specialist). Cost 1.200 $ all-in. Deliverables: 2 hard copies and 1 soft copy. Copyright with ACT.

- For the next project year we could implement 3-4 one-week courses, depending on demand. The surveys showed that present inseminators are not all qualified and could use a refresher course. In other areas no AI service is available and new inseminators are to be trained (after we have obtained more information on demand, number of breedable cows and possible candidates for training).

- We have to include sufficient budget for training and accommodation costs (trainees should stay together, rather than travel home). The present NHE offer has to be reviewed.

- NHE and AIM both submitted training programs: NHE has sufficient practical training in AI, while AIM is mainly demonstration and theoretical information. CVs of qualified trainers are crucial: NHE staff appears to be competent. Nariman (very experienced inseminator and trainer) might be an alternative.

- As we anticipate having contracts with AIM and JAC the easiest option is to make them responsible for the organization (accommodation, provision of training equipment, straws and live animals), while the hired professional conducts the actual training.

- Live animals will be rented for the training courses. We will need 6-8 animals for training (as many as possible) and in addition visits to a slaughterhouse could be considered.

Once the approach has been agreed, we will discuss the various options with the service providers and come to an agreement.

Approach agreed, see next page.

Conclusions:

1. Present AIM budget for AI training can be cancelled
2. Based on capabilities of BDS support, training should be provided outside this support in Year 2.
3. Revision and digitalization of training manual can be arranged through local STTA contract.
4. Trainer (Nariman?) can also be arranged through local STTA contract.
5. In meeting with Nariman we will decide what should be used from the old manual.
6. AIM, if it is included in their year 2 contract, can organize the training on AI (plan for 2 courses in Year 2). This will include a budget for accommodation, training facilities, cattle rent, semen and training equipment.
7. For new inseminators basic set of equipment will be needed (1000 AZN). Kits may be able to be granted to the BDS, and then the BDS can give the equipment on loan.
8. AIM and JAC still have to provide candidates for training and justify this choice.

28/9/11