

DESIRE WB-3 Stakeholder Workshop 2 report

WP3.3 Stakeholder Workshop 2 report - held in Marks District, Saratov Oblast, RUSSIA.

8-9 August 2008

Authors: Anatoly ZEILIGUER, Vyacheslav SEMENOV, Olga ERMOLAEVA.

August 19th 2009

Moscow State University of Environmental Engineering (MSUEE), Moscow, Russia.

Report number 60

Series: Workshop and Meeting Reports

This report was written in the context of the Desire project
www.desire-project.eu





Workshop Report – English Summary

Stakeholder workshop 2

Selection and decision on technologies / approaches to be implemented

Results and conclusions from the stakeholder workshop

Name of the study site: NOVY

Date of workshop: August 8-9, 2008

Authors: Anatoly ZEILIGUER, Vyacheshlav SEMENOV, Olga ERMOLAEVA

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PREFACE

This report presents the results of the 2nd stakeholder workshop held in Marks District of Saratov Oblast, Russia 8-9 August 2008 and organized by the Russian team within the framework of the DESIRE project

INTRODUCTION

After the completion of the first workshop (11-13 February 2008), the second stakeholder workshop was dedicated to the selection and decision on mitigation strategies to be implemented in the study sites.

I. General Information

I.1 Workshop

Workshop venue: Marks District, Saratov Oblast, Russia

Workshop moderator(s): Anatoly Zeiliger, Vyacheslav Semenov, MSUEE, Russia

I.1.1 List of workshop participants:

Table 1. List of participants at workshop 2.

	Mr ./ Ms .	First name, name	Stakeholder category / institution (e.g. land user, researcher, NGO, GO)	Local or external particip ant(L / E)
1	Mr	Jury Alexandrovich EMEL'IANOV	Chief of Privolghsky filial of Federal State Unite of «Saratovmeliovodkhoz»	L
2	Mr	Alexander Nikolaevich LARIONOV	Chief of farm «Larionov»	L
3	Mr	Vladimir Ivanovich SHEREMET'EV	Chief of Komsomolsky branch of Privolghsky filial of Federal State Unite of «Saratovmeliovodkhoz»	L
4	Mr	Viktor Imanuilovich MINDRBERGER	Chief of farm «Merkury»	L
5	Mr	Sergey Anatolievich PESTR'AKOV	Chief of Hydro-Geological- Ameliorative branch of Federal State Unite of «Saratovmeliovodkhoz»	L
6	Mr	Vladimir Pavlovich TALALENKOV	Chief of firm «Vertical»	L
7	Mr	Nikolay Mikhailovich KOSHKIN	Chief of Department of Research and Informatics of Federal State Unite of «Hypropromselstroy»	L
8	Mr	Valery Timofeevich MORKOVIN	Senior Researcher of State Research Institute «VolgNIIGiM»	L
9	Mr	Nikolay Vladimirovich UDAEV	Dean of faculty «Environmental Engineering» of Saratov State Agro University named after Vavilov	L
10	Mr	Boris Anatolievich AVDENTOV	Chief of Department of Water Resources of State Committee of Environment and Natural Resources Using of Saratov Region	L
11	Mr	Vladimir Alexandrovich SHADSKIKH	Vice Director of Research Institute «VolgNIIGiM»	L
12	Mr	Konstantin TSOY	Chief of farm	L
13	Mr	Vladimir Aleksandrovich KIRILLOV	Chief of farm	L

14	Ms	Lubov Ivanovna NEMOVA	Engineer of Ershov' Office of Irrigation System Survey	L
15	Mr	Yury Ivanovich SHNURENKO	Engineer of Novouzensk' Office of Irrigation System Survey	L
16	Mr	Serghey Viktorovich. ZATYNATSKY	Professor of Saratov State Agricultural University named after Vavilov	L
17	Mr	Philippe Nikolaevich TURIN	PhD student of Saratov State Agricultural University named after Vavilov	L
18	Mr	Kirill Nikolaevich KOROLEV	BSc Student of Saratov State Agricultural University named after Vavilov	L
19	Mr	Vadim Petrovich REINER	BSc Student of Saratov State Agricultural University named after Vavilov	L
20	Ms	Galina Faustovna SOKOLOVA	Agricultural researcher, specialist in vegetables	E
21	Mr	Anatoly Mikhailovich ZEILIGUER	Professor of Moscow State University of Environmental Engineering	E
22	Mr	Vyacheslav Nikolaevich SEMENOV	Ph D student of Moscow State University of Environmental Engineering	E
23	Mr	El Sayed Said	Ph D student of Moscow State University of Environmental Engineering	E
24	Mr	Aleksey Vladimirovich TEPLOV	MSc student of Moscow State University of Environmental Engineering	E
25	Mr	Oleg Nikolaevich KARPENKO	MSc student of Moscow State University of Environmental Engineering	E
26	Mr	Lorenze van der ZEE	BSc Student of Wageningen University	E

I.2. Background

I.2.1 Preparatory work prior to the workshop

During 1st stakeholder workshop it was decided to do the 2nd one at the beginning of August. At the beginning of July after some telephone calls to involved stakeholders from Saratov region administration it was decided about timing (8-9 August) and place (Marks town and Mikhailovsky village) of this workshop. After choosing of the date the invitations were sent to all invited participants.

I.2.2 Stakeholder workshop

The workshop was split into two days at Marks town (8 August) and Mikhailovsky village (9 August).

The second stakeholder meeting involved various groups of participants: administration, officers of Saratov Region and Marks district, local farmers and owners of subsidiary plots, researchers.

I.2.2.1 Local stakeholders

According to their main position all local stakeholders were divided into three groups:

- 1) Central administration officers dealing with desertification issues (10, 11);
- 2) Practitioners in agricultural and engineering issues at regional scale dealing with soil and water resources (1, 3, 5, 7, 8, 9, 14, 15, 16, 17, 18, 19)
- 3) Local farmers and home holders having local experience to struggle with desertification reality (2, 4, 6, 12, 13)

I.2.2.2 External stakeholders

External stakeholders:

- 1) Specialist on irrigation agriculture in this area (20)
- 2) Researchers and students with background on soil and water resources management (21, 22, 23, 24, 25, 26)

I.2.2.3 Overview on the methodology of stakeholder workshop 2

Methodologically, the selection of options was based on the WOCAT database and the scoring as well as decision process was supported by Multi Objectives Decision Support System (MODSS) software

I.2.2.4 Program of the stakeholder workshop

During the 1st day of workshop three presentations were performed. The first presentation was on to the objectives, approaches and technologies of the DESIRE project. The second presentation was on to the results of 1st workshop “Land degradation and desertification – existing and potential prevention and conservation strategies” and the following steps. Third presentation was on to the objectives and methodology of the 2nd workshop “Selection and decision on technologies/approaches to be implemented”.

It was underlined that the main objectives of the workshop were:

- ✓ Selection of 1-3 options (mitigation strategies) from WOCAT database as well as from the technologies already proposed during 1st workshop or already applied at the local level.
- ✓ Strengthen trust and cooperation among different groups involved in the DESIRE project

All presentations were deeply discussed and answers to all questions were given.

During the second part of workshop the following steps were discussed and performed:

- ✓ What are the selected options for implementation and what modifications to the local conditions are necessary?
- ✓ What are the criteria to evaluate the selected/modified options?
- ✓ What are the scores to be attributed to rank the options?
- ✓ What are the ranking criteria to be applied to create a hierarchy of options?
- ✓ What is the procedure to analyze and prioritize the options?
- ✓ What are the approaches to embed the options into the overall strategy?

After the end of the official part of the workshop an evaluation of the WOCAT methodology in relation to the local conditions and an evaluation of the workshop results took place.

I.2.3 Study area

Novy Study site (latitude of 51°82' N and longitude of 47°03' E) administratively belongs to the territory of Marksovsky District, which is belonging to the Saratov Region (Oblast) of Russian Federation. This region from geographical point of view is situated in the southeast of the Eastern European plain named "Great Russian Plain" in the Lower part of Volga River, called Nighnee Povolzhie. (an area surrounding Volga downstream). Total surface area of the Marsovsky District is about $29 \cdot 10^3 \text{ km}^2$.

The natural divider of Saratov Region is Volga River. Saratov Region is very diverse territory. To describe the study area it is important to take into account on which bank of the Volga River is lying the area. The right bank of the river represents a strip of Eurasian steppe considered of different grass, but the left bank is a western province of middle Asian zone of deserts of moderate climatic zone.

Saratov Region is considered as a zone of risky agriculture where cultivation is impossible without irrigation. The predominant original and current land use type is cropland, specifically annual and perennial (non-woody) cropping.

Territory of Marksovsky district is located in the zone prone to land degradation and which after FAO classification is a zone of very high land degradation. After Kust, 2002 research of land degradation indicators and processes mapping in South region of Russia in this zone, the main degradation process is soil alkalisation at used space scale.

From scientific point of view a major land degradation problem in this area is caused mainly by long time irrigation system used since their construction from 1960th which provoked a ground water table rising originated by overdoses of water application for irrigation. By consequences the ground water rising provokes (1) water logging of irrigated and surrounding of irrigated areas causing change of soil water regime from semi-arid to semi-humid, (2) a secondary soil salinization due to dissolution of salt crystals stoked in the ground layers of vadose zone and lifting them to the upper root zone creating toxic conditions for plants and augmenting a soil water osmotic pressure leading to diminishing of interval of available for plants water in soil, (3) soil organic matter content diminishing due to soil layer washing, which leads to soil compaction, damage of soil structure, worsens hydraulic conductivity & water retention capacity and other soil parameters.

From the land users' point of view a high groundwater level, not uniform pattern of soil fertility and extensive weed growth are consequences of extended irrigation of former time that in some area are still maintained. Thus, the main degradation type of irrigated fields and surrounding territories are chemical soil deterioration, i.e. salinization: a net increase of the soluble salt content at the plant root zone leading to a productivity decline.

II. Results and conclusions step by step

The following steps were carried out during the 2nd stakeholder workshop with strong cooperation with local and external participants. The results of each step are summarized below.

II.1 Step 1: Review and adjustment of the objective

The soil salinization of irrigation agriculture due to change of hydro-geological patterns under impact of over dozing of irrigation water application and loss of water from irrigation water supply canals. Following this suggestion a **soil and ground water quality conservation against salinization** was chosen as first objective.

The change of irrigation techniques from sprinkler irrigation to furrow irrigation due to partial change of agricultural land management (from collective farm with big size of irrigation fields to individual farm with small field size) and arrival of new agricultural workers from outside of Russia and as consequence a risk of soil water erosion was considered as the second serious desertification problems in this area. Following this suggestion a **soil protection against soil water erosion provoked by furrow irrigation** was chosen as the second objective.

II.2 Step 2: Selected options and necessary adaptations

At the beginning of the workshop a list of technologies pre-selected from WOCAT SWC measures (translated into Russian) was delivered in written form as well as explained in details by means of presentation, answers to the questions and deep discussions.

Regarding to the 1st objective (**soil and ground water quality conservation against salinization**), stakeholders have selected and adjusted the following potential options developed for local conditions:

- 1) Adjusting soil water regime under sprinkler irrigation to crop needs at real-time weather and soil conditions and soil/ground properties;
- 2) Reducing of the infiltration losses from water supply channels by improving bed impervious cover and effective use of water;
- 3) Construction of subsoil drainage.

Regarding to the 2nd objective (**soil protection against soil water erosion provoked by furrow irrigation**), stakeholders have selected and adjusted the following potential option taken from WOCAT QT and adjusted to the local conditions:

- 1) Drip irrigation with local and external fresh water sources.

After additional discussion of both objectives and related options it was decided to merge them in one main objective - **soil quality conservation against salinization and water erosion** with three potential options:

- 1) Adjusting soil water regime under sprinkler irrigation to crop needs at real-time weather and soil conditions and soil/ground properties;
- 2) Reducing of the infiltration losses from water supply channels by improving bed impervious cover and effective use of water;
- 3) Drip irrigation with local and external fresh water sources;
- 4) Construction of subsoil drainage

II.3 Step3. Criteria for evaluation

Proposed to the wide dissemination and applications at quite similar local conditions the selected options have to be specific to the economic, ecological and socio-cultural context of the study site. For this reason proposed options have to be evaluated by different criteria proposed by local stakeholders. After some discussions stakeholders decided to use for scoring the following criteria presented in table 2.

Table 2. Criteria for options on “Soil quality conservation against salinization and water erosion”

Economic	Ecological	Socio-cultural	Off-site
Sustainability of agricultural production	Reduced risk of soil salinization	Employment opportunities increasing	Suitability for dissemination
Fresh water effective use & price	Reduced risk of water logging	Recreational use of local ponds	Reduced demand for water supply from Volga River
Crop yield and farm income increasing	Reduced risk of soil water erosion		
Labor cost and maintaining expenses decrease		-	
	-	-	-

II.4 Step 4. Scoring of the options made by different groups of stakeholders

Stakeholders decided by voting to use a 5-fold scoring, with 0 for the worst (unaccepted totally) and 5 for the best.

Four groups (1 groups of administration, 1 group of practitioners, 1 group of farmers and 1 group of external experts) separately voted each for the chosen options according to the pre-defined criteria.

- 1) Central administration officers dealing with desertification issues (10, 11);
- 2) Practitioners in agricultural and engineering issues at regional scale dealing with soil and water resources (1, 3, 5, 7, 8, 9, 14, 15, 16, 17, 18, 19)
- 3) Local farmers and home holders having local experience to struggle with desertification reality (2, 4, 6, 12, 13)
- 4) Specialist on irrigation agriculture in this area (20) and researchers and students with background on soil and water resources management (21, 22, 23, 24, 25, 26)

The scoring for options “Soil quality conservation against salinization and water erosion” given by four groups of stakeholders is presented at table 3, 4, 5, 6.

Analysis of scoring table indicates that all four groups of stakeholders the preferences given by their votes have quite similarly tendency to each other.

The results of the scoring made by the four stakeholder groups shows that among the options for “Soil quality conservation against salinization and water erosion” the “Drip irrigation” was ranked as the best valuable.

Table 3. Scoring for options on “Soil quality conservation against salinization and water erosion” made by the 1st group of stakeholders (administration)

CSORING/OPTIONS	Sustainability of agricultural production	Fresh water effective use & price	Crop yield and farm income increasing	Labor cost and maintaining expenses	Reduced risk of soil salinization	Reduced risk of water logging	Reduced risk of soil water erosion	Employment opportunities increasing	Recreational use of local ponds	Dissemination of good practice example	Reduced demand for water supply from Volga River
Adjusting soil water regime under sprinkler irrigation	4	4	3	3	4	4	4	3	3	4	4
Reducing of the infiltration losses from water supply channels	3	3	2	2	3	3	2	2	1	2	3
Drip irrigation with local and external fresh water sources	4	5	4	4	5	5	5	4	3	4	4
Construction of subsoil drainage	3	2	3	2	4	4	2	2	2	3	1

Table 4. Scoring for options on “Soil quality conservation against salinization and water erosion” made by the 2nd group of stakeholders (practitioners)

CSORING/OPTIONS	Sustainability of agricultural production	Fresh water effective use & price	Crop yield and farm income increasing	Labor cost and maintaining expenses	Reduced risk of soil salinization	Reduced risk of water logging	Reduced risk of soil water erosion	Employment opportunities increasing	Recreational use of local ponds	Dissemination of good practice example	Reduced demand for water supply from Volga River
Adjusting soil water regime under sprinkler irrigation	4	5	4	2	5	5	3	2	3	4	4
Reducing of the infiltration losses from water supply channels	4	4	3	2	4	4	2	2	2	2	3
Drip irrigation with local and external fresh water sources	5	5	5	3	5	5	5	5	4	4	4
Construction of subsoil drainage	2	2	2	2	3	4	1	2	2	3	2

Table 5. Scoring for options on “Soil quality conservation against salinization and water erosion” made by the 3rd group of stakeholders (farmers)

CSORING/OPTIONS	Sustainability of agricultural production	Fresh water effective use & price	Crop yield and farm income increasing	Labor cost and maintaining expenses	Reduced risk of soil salinization	Reduced risk of water logging	Reduced risk of soil water erosion	Employment opportunities increasing	Recreational use of local ponds	Dissemination of good practice example	Reduced demand for water supply from Volga River
Adjusting soil water regime under sprinkler irrigation	3	3	3	3	4	3	2	2	3	3	3
Reducing of the infiltration losses from water supply channels	3	3	2	1	3	3	3	1	3	3	3
Drip irrigation with local and external fresh water sources	5	5	5	4	5	5	5	5	4	4	4
Construction of subsoil drainage	1	1	2	2	2	1	1	2	2	3	2

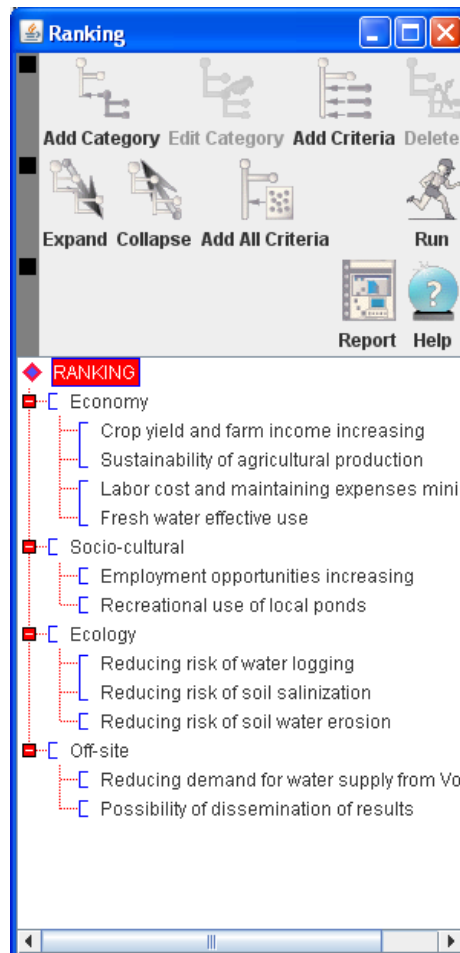
Table 6. Scoring for options on “Soil quality conservation against salinization and water erosion” made by the 4th group of stakeholders (external experts)

CSORING/OPTIONS	Sustainability of agricultural production	Fresh water effective use & price	Crop yield and farm income increasing	Labor cost and maintaining expenses	Reduced risk of soil salinization	Reduced risk of water logging	Reduced risk of soil water erosion	Employment opportunities increasing	Recreational use of local ponds	Dissemination of good practice example	Reduced demand for water supply from Volga River
Adjusting soil water regime under sprinkler irrigation	5	5	5	4	5	5	3	4	3	5	5
Reducing of the infiltration losses from water supply channels	3	3	3	4	4	4	3	2	3	4	4
Drip irrigation with local and external fresh water sources	5	5	5	5	5	5	5	5	4	5	5
Construction of subsoil drainage	3	3	4	3	3	3	3	2	2	3	3

II.5 Step 5. Ranking criteria

Criteria were ranked by discussion groups of stakeholders and were guided by one moderator (from external experts). A MODSS software package was actively used for demonstration of voting results by screening to the blackboard by multi-media projector. This procedure was useful to stakeholders by letting them informed during the meeting time.

Ranking of the criteria was performed as shown at following picture.



Picture 1. Ranking of the criteria for option Soil quality conservation against salinization and water erosion

Results, obtained from various groups of stakeholders were discussed at workshop. Specialists explained pluses and minors from their point of view, practitioners and farmers told their visions and possibilities for the implementation of options.

II.6 Step 6. Analysis and interpretation

The analysis of voting for selected options was based on the use of MODSS software package helping to identify a preferred option consistent with the ranking of the criteria. Analyzing the results of analyses for the main objective (**Soil quality conservation against salinization and water erosion**), showed that the highest vote (5/6) was given to "Drip irrigation" which was followed by "Adjusting soil water regime under sprinkler irrigation" and "Reducing of the infiltration losses from water supply channels"

A discussion following this analysis made the interpretation of the result becoming clear. Almost all stakeholders having bad experience with sprinkler and furrow irrigation in this

region that provoked rising of ground water and secondary salinization are quite sure that drip irrigation with different sources of fresh water could be very useful and effective after being tested during DESIRE project lifetime for thereafter dissemination.

II.7 Step 7. Prioritization of options

The results obtained by ranking were discussed with all stakeholders. Taking into account the different concerns of administrator and farmers on different scale and dimensions of interest, influence and responsibility it was decided for regional scale of Marks district to give the following prioritization of options:

- 1) Adjusting soil water regime under sprinkler irrigation;
- 2) Drip irrigation with local and external fresh water sources;
- 3) Reducing of the infiltration losses from water supply channels

II.8 Step 8. Embedding into overall strategy

Discussions during and after voting/ranking showed that the implementation of technology have a great importance at both regional and local levels. For implementation of drip irrigation at local levels, many of participants were very interested in this technology and accept to allocate their plots and fields for implementation and monitoring activities of the DESIRE project.

Discussion further revealed that for soil and ground water conservation at scale of Marks district level a special software package for effective management of both water supply systems and irrigation fields has a big importance. This software package could be a very efficient tool also for different aspects of soil and water resources management.

III. Evaluation of the workshop

Participants, particularly farmers are very pleased with the interactive methodology of the meeting. They fully appreciated the WOCAT methodology as well as the included case studies. At the same time they indicated that most of these case studies were collected from underdeveloped regions. Some of the options need to be more clearly explained.

From the moderator point of view the 2nd stakeholder meeting based on WOCAT methodology was successful and the results following the selected/ranked options could be beneficial for different management aspects of prevention of desertification problems as well as to find local solution for soil quality conservation against salinization and water erosion.

IV. Other information

Difficulties encountered

A long 2 days workshop is very difficult to organize with participations of different stakeholders having some time huge responsibilities and short time availability.

Changes made concerning the procedure suggested in the workshop guidelines

To maintain a good work process the meeting was organized in two locations that permitted to change situation and provided to participants additional useful information.

How was the interest and participation of the different stakeholder groups in the workshop?

The participants showed pretty high interest in finding potential strategies and synthesis, especially representatives of research institutions. The process was interactive and fruitful.

Recommendations

If people for the stakeholder meeting are from two remote areas it is better to organize one day at one location and second one at another one.

Comments

There are some answers for the comments given by CDE to this report:

Comment: It seems you hardly had the same participants as in the first workshop (only 3-4)? Why? It's good that you had some farmers this time, but maybe unfortunate to have so many University people?

First of all we have very high rate of the personnel turnover, especially in governmental organizations. Secondly – first workshop was the first try, now, when we do know much better people with whom we can work (who will not only talk, but also try to implement things after the workshop). Thirdly - in Russia we have not a stable situation with farmers (this is one of the problem related to soil and water quality maintenance). Each year a lot of farmers are going out of business (especially in agriculture production, where you depend also on weather conditions). That is why the people in the first workshop were not the same as in the second.

As you can see from the first stakeholder report, several farmers were invited for the first meeting – but they couldn't come. This time (due to changes of workshop schedule – one day in one location and another in the second), the participation of local farmers were better. Farmers do not like to travel that far from their land, as well as the people from the administration do not like to be far away from the place of the work. From psychological point of view the division of the workshop in two locations was beneficial for the target of the meeting.

We do not think that presence of the University people are a bad side of the workshop. I think it is showing to the people our willingness to support from science point of view.

Comment: Very unequal size of groups. Did you do group work like that?

We think that this groping show the real situation and group should not be equal. We should see the difference in the mentality of various groups, not the averaged results.

Comment: How did you select the stakeholders for the workshop in such a huge area?

Stakeholders were selected based on availability of the person and it's readiness to participate in. A lot of work was performed in order to initiate the DESIRE activities, to make people ready for communication. We involved people from different groups.

It is a pilot project – in this case we do not need to choose several persons from each settlement of the study area, but choose one or two places with similar conditions of future dissemination. We involved high level of administration and if experiments of DESIRE will show good result – it can be easily spread over the territory.

Comments: How did you combine the results of the various groups? Did you simply made averages of the scores or did you discuss the differences of the groups? Did you actually use the Facilitator software during the workshop?

- We discussed the results at the meeting.
- Yes, we used the software. However, it should be taken into account that our colleague, who has been trained for this procedure left the project. In this case we had additional work to learn how to use this software and etc

Comment: I really find it a pity that you copied all text from the other report. I can't believe that all what was mentioned by the stakeholders was that much the same. And here I think you forgot to adapt it to the objective of this workshop, isn't it?

Yes, I think we did this mistake during the making of the copy from another site report. However, generally, stakeholders had the same thoughts – they appreciate the WOCAT database, work which we are doing and etc. But they told that they could not find options for their problem (from QT)- that is why we did some modifications of the options. They are thinking about money and work which need to be spent and the results, which they will obtain (or may be they loose if they will work with new technology).

Comment: why did the change of location maintain good work process? Please explain further.

Here I will do the copy of the explanation from the Dzhanibek plot. Because people (especially who are working in administration) are usually do not like to leave their place of work (means the settlement, where they are working) for more than 1 day. In our case it was quite beneficial for them that they are leaving the settlement for 1 day – and second one – they are at “home” and in case of emergency can leave the venue and than come back afterwards. It is better from the psychological point of view for the participants.