

PROJECT „PREVENTION OF RISK FOR SUSTAINABLE DEVELOPMENT OF THE REGION“, CB005.1.11.047

PROJECTS WITHOUT BORDERS

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METHODOLOGY OF THE RESEARCH

This methodology provides a set of techniques for collecting and using information from beneficiaries under the project "Risk prevention for sustainable development of region", financed by the INTERREG-IPA program for cross-border cooperation between Bulgaria and Turkey and co-financed by the European Union through the Instrument for Pre-Accession Assistance II. Partners in the project are Black Sea Institute Association from Burgas, Bulgaria and Trakya University from Edirne, Turkey. The project was developed within Priority Axis 1 - Environment and Specific Objective 1.1. Prevention and mitigation of the effects of natural and man-made disasters in the cross-border area.

The aim of the developed methodology is to validate an algorithm for collecting, summarizing and analyzing of the information needed for the implementation of Activity 1 of the project for assessment and analysis of the joint risk - Investigation of the disasters, occurred in the TBR and development of "Risk Maps" and to conduct a "My risk knowledge" study to assess competent staff/farmer/administrative staff training, after attending the project trainings and participating in low-risk business initiatives.

Subject of research: natural and man made disasters (technological risk, ecological risk) in the target area, knowledge and competences about risk

Target groups and beneficiaries: Representatives of business circles, farmers, local authorities and citizenship of the Regions: Bourgas, Yambol, Haskovo (Bulgaria) and Edirne and Kirklareli province (Turkey), students and academic staff from the University of "Prof. Dr. Assen Zlatarov and Trakya University

The methodology has been developed within a five-step model, using the following algorithm:

Stage 1 - Planning the study

Stage 2 - Constructing a questionnaire

Stage 3 - Conduct the study

Stage 4 - Analysis of collected information

Stage 5 - Action

Stage 1 - Planning of the project for study on the views of the target groups

The initiative for study the opinion of the target groups is developed by the experts on Technology Risk, Ecological Risk and Risk Assessment and Analysis from the two partner countries within the project. The information will be collected in a jointly way by both parties, because both organizations have the potential to co-operate in supporting this process, organized by their experts. In developing of this stage of the study, the following sub-topics are specified:

1.1. What do you expect to achieve with this feedback?

1.2 What will the information be used for?

1.3 What is the most appropriate application of the collected information ?:

- **As a key indicator of risk assessment?**
- **To revise, correct and improve the process of risk assessment and analysis?**
- **To identify the needs and expectations of the target groups?**
- **As a tool for managing the relationship with the target groups?**
- **For informed planning, decision making and allocation of resources?**
- **For something else**

1.4 Who will use these results?

- **Who else is interested in these results?**
- **How long can the respondents spend on getting familiar with the results?**

1.5 What studies have been done in this area so far?

A research is being carried out on the most recent studies in the field of assessment and analysis of environmental and technological risks, natural disasters and the preparedness of the population for actions in critical events that can be address to the above mentioned risks. Inquiries will be made to experts in these areas from Bulgaria and Turkey for

research results to see if there is other structure, which had gathered such information so as to avoid unnecessary duplication of action and to compare the results .

1.6 What are the main questions that are asked to examine consumer opinion? Included are some basic questions that are used to get information in the key areas of project interests - assessment and analysis of man made disasters - environmental and technological risks, natural hazards and disasters.

1.7 How often should feedback be sought from target groups?

The following principles are complied with:

- Avoid gathering information that is already available and up-to-date;
- Organize surveys so that they do not interview the same people several times;
- Ask the Beneficiary's agreement to participate in the study.

1.8. Which target groups are needed and what service can we offer them in return? Representatives of the local government, the civil sector, business circles, farmers and academics in Bulgaria and Turkey should have the opportunity to:

- Direct connection with the organization or defined through another organization;
- To receive one or more services;
- Rely on the organization for expert advice;
- Be directly affected by organization's actions;

1.9. Preparation of a written plan for the elaboration of a questionnaire for assessment of the technological and environmental risk

At the end of this stage a plan should be made with the following content:

- Purpose of the activity;
- Quality control procedures;
- The ways in which the results will be used;
- Identification of the target group;
- Methods of collecting information;
- Time limits for collecting information;
- Means to conduct a survey of the consumer opinion;
- Research tool (e-mail, Internet, paper, telephone, google form);
- Database.
- Expected products;
- Tables;
- Text interpreting the results;
- Slides;
- Reports;

Checklist for Step 1 - "Planning the project to study the views of the target groups.

- Decide which questions will be included in the questionnaire;
- Decide how often the research will be conducted in accordance with the project activities;
- Define your target group in accordance with project activities;
- Identify the topic for which you will conduct a survey;
- Identify the goals of your study;
- Decide whether to conduct the survey or to outsource it;
- Define the necessary resources;

Stage-2 Identify procedures for data collection

2.1. Identify the best approach for you to explore the views of target groups.

There is no universal approach to assessing of the satisfaction from the survey's results. What is good for an organization depends on the type of service offered, the types of users, the number of served beneficiaries, the duration and frequency of the interaction between the user and the service provider and what you intend to do with the results. Two radically different approaches can give equally meaningful and useful results.

Continuous evaluation approach - approach to receive feedback during an event (or shortly thereafter). This approach will be used to collect information on the adequacy of the information provided during the training provided by the project. It is important to keep in mind that the continuous assessment method can be considered as a standard method of obtaining information.

Immediate Assessment - an approach that will be used to organize the collection of information to create the risk map for Bulgaria-Turkey border area in the form of a questionnaire to be sent to the representatives of the target groups and beneficiaries of the project

2.2. Selection of a data collection method.

Before thoroughly reviewing the systematic methods of collecting information from target groups, it should be noted that informal methods of obtaining information are not to be underestimated.

The existing formal methods for collecting information will be used: e-mail survey, telephone survey; questionnaire or personal interview.

2.3. Select representative sample.

Pre-compiled aggregate/sample - In this sample, target audience members are consciously selected by the researchers with the idea that these respondents will be a representative part of all served users. In this case, they are representatives of the target groups;

2.4. Determination of the sample size.

The ratio between sample size and the accuracy of results is the so-called statistical error - a measure that indicates to what extent the sample deviates from the selected target group (all surveyed users).

To determine the volume of the sample we can:

- Determine the largest number of people in the sample that we could afford and calculate the statistical error;
- Determine the maximum statistical error permissible for our study and choose a sample size that would give a statistical error at these levels.

The statistical error can be calculated using a confidence interval. The confidence interval specifies the range of values within which the true dimension is located. Research has been assumed to rely on a 95% confidence interval, but lower levels may be allowed, depending on how the results are planned to be used.

2.5. Develop questions.

When questioning questionnaires are being developed, two basic principles are respected:

- 1) Questions and answers serve their purposes;
- 2) Questions are limited to what is necessary.

The questions in the questionnaire are two types: open and closed. In the open questions the interviewees formulate their own answer. Closed questions limit the answers the user can give. They can be categorical yes/no responses and responses graded by strength or rocks, as well as questions from a pre-selected menu.

2.6. Create a poll questionnaire using the following algorithm:

- Introduction - Describes the purpose of the study and guides the user on the issues;
- Measurement - the user presents his/her experience, impressions, needs and expectations;
- Consumer information - gathers data that will be used to classify respondents;
- The methods used to make questionnaires differ from each other based on how information is collected.

Effective issues - those that use the following principles:

- Use short questions and answers;
- Use short words;
- The professional jargon is avoided;
- They are as clear and easy to understand as possible;
- Issues are arranged in a logical order;
- Use a suitable set of responses (including all possible answers and avoiding overlapping replies);
- Do not use double negation;
- Questions are set well and intriguing;
- Issues are written appropriately for the level of their audience;
- Pre-tested questions are used in other studies;

- Issues that are of interest are excluded but are not important for the purposes of the project.

Checklist for step 2 - "Data collection procedures"

- Drawing up the sample from the target group;
- Identify the method of data collection;
- Choice of approach;
- Development of questions;
- Preparation of a package of documents for approval;
- Preparation of questionnaires;
- Carry out a preliminary test;
- Finalization;

Stage 3. Methods of data collection

Methods of data collection are: e-mail research, telephone survey, electronic feedback - a google form, etc. One of the methods for collecting data is usually selected.

3.1 E-mail surveys

Questionnaires and surveys must be long and must be attractive and easy to read. The first page should be also attractive for the eye and should not contain any questions. It should indicate the exact name of the research project and show who is conducting the study. Questions must be presented in a logical order. Most experts believe that the first question of the survey more than anyone else determines whether the user will fill in or ignore the questionnaire. It is appropriate to start with a relatively easy question as this will suggest to the user that filling in the questionnaire will not be difficult or long. It is also advisable to ask an interesting first question to attract the respondents' attention. A mail survey typically involves several conversations, each of which is called "wave". Send each wave of one study on the same day:

- If an advance letter is used, it should be sent to all in one day;
- When completed surveys begin to arrive, they should be reflected in the tracking system. Similarly, the returned mail (when the user has a changed address or has an address error) is reported against, and notes that the letter can not be delivered.
- Three weeks later, a copy of the questionnaire is sent to those who have not answered yet. The cover letter must highlight this time the importance of the study and ask for co-operation. The replica must be in a color different from the first. Color differentiation is a signal to the user on the one hand, and on the other helps to track the responses.

The following steps very often help to increase the number of responses:

- The pre-release letter (if used) must be written on an official letterhead signed by a person whose name or position speaks to the consumer very much;

- Correspondence must be personally signed, not a rubber stamp with a name or a scanned signature;
- "Request for address correction" is used to get information for users whose correspondence can not be delivered to use the correct address in the next mail;
- Whenever possible, a free phone is available for the time of collecting the information and customers are encouraged to call them with questions or comments;
- Respondents are given the option to return on viber or messenger the filled questionnaire;
- Email survey data is collected or scanned. It is best to wait for a large number of filled-in questionnaires to be collected before the data from the first batch is started.

3.2. Telephone studies

Personal and telephone interviews require oral speech, which may be very different from the written, and the representatives of the target group should be able to answer the questions only on the basis of what they hear.

- As consumers rely more on word-of-mouths and instructions than on written questions, they should have a limited number of response options (about three or four options);
- Each issue is relatively short;
- Avoid questions that force the respondent to seek information or to reconcile with others;
- When composing a questionnaire, questions are read by a second person attitude to make sure they sound clear and understandable. What is good in writing is not always good in the oral;
- The layout of the questions usually leads to confusion in a telephone interview, as opposed to a written or personal study.
- When changing topic in phone interviews, it is good to point out— this to the user with a transitional replica "And now I would like to ask you questions about ...)";
- There must be clear and systematic instructions to interviewers throughout the study. For example, the instructions to the interviewer are usually given in brackets, in capital letters).

3.3 Electronic Feedback -Google Forms

Internet surveys use a web-based form (Google) that the user fills online at an email address. To conduct an Internet survey, you should contact the people you have selected for your sample. Once the list has been compiled, an e-mail message is sent out, indicating the relevant research website. Once the page is found, respondents enter the survey and can start filling in the questionnaire.

Internet surveys have several advantages:

- They are interactive like phone studies and allow for jumping patterns. In contrast, however, in Internet surveys, respondents see the issues;
- Respondents can complete the questionnaire at a convenient time;

- There are no phone and postage costs.

Internet surveys are one of the fastest and most intrusive ways to collect feedback from users. Up to 50% of responses are received within 24 hours. They are also cheaper to run, as they do not involve the costs of interviewing, printing and distributing the materials.

However, they have several disadvantages. Respondents are unlikely to have a sense of anonymity. In addition, with the increase in the use of e-mail addresses, many people are intolerant of the large number of spam they receive.

Stage 4. Data analyses

During the entire feedback process, there must be a defined data analysis framework. The analytical plan is a particularly useful tool for organizing and analyzing data. It should specify how the survey responses are analyzed. This plan provides answers to important questions, excludes unnecessary data, and outlines expected results.

It is important to include two main components:

- Indicate a dependent and independent variable;
- Specify a measure of analysis.

Dependable variable is the phenomenon being studied.

Independable variable helps explain the observed values of the dependent variable, and may include factors such as the difference in frequency and type of impact, differences in users.

The measure of analysis is what is being studied. In a study, the analytical measure will in most cases be the individual. When using a continuous feedback method, then the measure of analysis is one transaction with the individual beneficiary.

4.1. Data Clarification.

This is the moment for a frequency analysis to show the number of answers of each type of questions (the number of yes/no answers to yes/no questions) and the total number of all kinds of answers to each question. This quick analysis gives inaccurate conception of the completeness and accuracy of the data (the total number of the answers per question should not exceed the total number of respondents, and will rarely differ from the total number of answers to any other question).

4.2. Motivation Analysis.

It allows for the identification of the areas that deserve the most attention. Two analytical techniques are used in the motivation analysis: declared significance and origin significance.

The expected significance - uses the answers that concern issues that are important to users.

The derived significance - it is formed by satisfaction.

4.3. Data Presentation.

The best way to show the results of the study is to present the data to the representatives of the target groups in a simple and direct way, without the mathematical details of a probable application or review. Consumers usually prefer a brief summary of the results. A representative summary should be prepared to serve as the basis for a detailed presentation. Graphical presentation of data is a very appropriate way to present the results.

4.4. Formulation of recommendations.

Feedback from users suggests potential future deployment of the problem and specifying of the solutions.

4.5. Development of recommendations.

It is up to the consumer whether the recommendations will be generalized and developed. The initial purpose is action-oriented to improve performance. Answers to the questions should naturally lead to actions to improve the effectiveness of the project.

The recommendations should be applicable, supported by the conclusions (which are supported by data) and be formulated unambiguously. Providing a list of options to achieve the recommendations may increase the possibility of its implementation in action.

4.6. Presentation of recommendations by graphs.

At least 70% of the message is good to be visualized - that's the way people perceive the information. Suitable visualisation tools are used to present the information. It is recommended:

- To insist of the important facts, present by values;
- To show facts, trends, comparisons and interrelations that may be missed in a text or a table;
- To summarize, group or filter data;
- To bring variety and interest to the texts, tables and references.
- To show components or parts of the overall, the best way is to use sectoral graphics. Using of the line graphs is applied to display independent or accumulated values when:
 - the data covers a long period of time and several series to be compared in one chart;
 - the changes to be shown, not the quantity;
 - trends are being to be demonstrated;
 - interconnections to be presented;
 - graphical parameters and series to be changed sharply.

It is not good to use column graphs to compare multiple data sets, to display data with different graphical parameters, or to display a number of components. It is recommended to use picture charts to illustrate concepts and ideas.

Checklist for step 4 - "Data Analysis"

- Clarification of the data

- Identify the appropriate type of analysis;
- Run the analyzes;
- Provide the data;
- Formulate conclusions and recommendations based on the data;
- Provide the recommendations.

Stage 5. Actions according to the results

When the data gathering from users is at the end, then actually the real work begins. According to the chosen feedback method, a basic set of information is created, that characterizes the respondents' assessment.

Users who give their opinion, await for a response to their feedback and report. Whenever it's possible, they need to be informed.

During the planning phase, potential methods and procedures for responding to the results of the activities, coming from user feedback, should be identified.

5.1 Instant reaction.

Surveyors should be ready to hear a negative opinion from users. It is good to set up a fast response mechanism for such cases.

5.2 Reporting.

Even when the original tool of action is an oral examination, it is very important to prepare a written document, which others can read or refer to. That document can be a historical archive that tracks changes in time. Most of the people who are review the information, prefer to see graphs and summary tables. The reports may also contain a representative summary, a description of the study objectives and data collection methods, an outline summary of conclusions (illustrated with graphs and tables) as well as conclusions and recommendations.

5.3. Conducting a brief discussion-review.

The management team is assembled and the conclusions examined.

5.4. Prioritization.

It is possible users opinion to provide a large content of information. Information should be sorted out, so that it provides guidance to listeners or readers about a series of practical steps that follow logically one after another. Activities are even more successful in developing a few small action plans than a big plan that may seem incomplete.

5.5.Distribution.

In addition to the discussion-review being conducted, it is good to share the results.

5.6. Improvements.

There is no point in looking for feedback from users unless it is used to create a risk assessment and risk analysis database. The best way to use feedback from users is to develop an action plan. Action plans are most successful when the managers of each measure can:

- Identify and be included;
- To assist the assessment of their activities and feedback from consumers about them;
- Participate in strategic discussions;
- Have the opportunity to discuss issues and weaknesses.

5.7.Planning.

Collecting data directly from users is used to understand what has worked out and what needs to be improved in a similar activity. Identify aspects that have accelerated or delayed the achievement of purposes, including process characteristics after planning, data collection, analysis, and outcome processing. Achieving the objectives of the Action Plan, stemming coming from the study, requires additional resources.

FACT SHEETS

Fact sheet I "Who are your users?".

Identification Sector of the interviewed: Type of required information - Example of the target group - Expected Results.

Fact sheet II "Extract".

In a study to obtain feedback from recipients, the size of the sample excerpt needed to be determined. The fact sheet shows how randomly the number of users is selected from the list of beneficiaries.

In most cases, decisions should be made in the following areas:

- What you learned from the survey;
- Do I have to change a process to meet user comments?
- Should some of your reports be reviewed?
- Should be provided training for employees, related with services and survey consumer opinion.

"Permissible error" is usually represented in percentage with a plus or minus sign. For example, the permissible error may be $\pm 3.5\%$. In this case, the real value of a measurement for the target group, from which you receive feedback, is the value obtained from the users, $\pm 3.5\%$.

The confidence interval indicates how much you want to be sure that the real value is in a range of the sample. Most of the survey activities use a 95% confidence interval. This means that you can determine a permissible error of about 95%.

In the following table, you will find guidelines for selecting the sample volume.

VOLUME OF THE SAMPLE			
<i>SIZE OF TARGET GROUP</i>	<i>PREMISSIBLE ERROR</i>	<i>CONFIDENCE INTERVAL IN%</i>	<i>VOLUME OF THE SAMPLE</i>
1000	±5	80	141
1000	±5	90	214
1000	±5	95	278
500	±5	80	124
500	±5	90	176
500	±5	95	218
200	±5	80	90
200	±5	90	116
200	±5	95	132
100	±5	80	62
100	±5	90	74
100	±5	95	80
50	±5	80	39
50	±5	90	43
50	±5	95	45
VOLUME OF THE SAMPLE			
<i>SIZE OF TARGET GROUP</i>	<i>PREMISSIBLE ERROR</i>	<i>CONFIDENCE INTERVAL IN%</i>	<i>VOLUME OF THE SAMPLE</i>
1000	±10	80	39
1000	±10	90	64
1000	±10	95	88
500	±10	80	38
500	±10	90	60
500	±10	95	81
200	±10	80	34
200	±10	90	51
200	±10	95	66
100	±10	80	29
100	±10	90	41

100	±10	95	50
50	±10	80	23
50	±10	90	29
50	±10	95	34

If the decisions you make using the survey results are meaningful, long-lasting and cost-effective, use a 95% confidence interval;

If the decisions you make are not so significant, with no long-lasting effect and not so cost effective, use a 90% confidence interval;

If the decisions you will take have limited consequences, especially in the short term (eg over the next six to twelve months), you can use a 80% confidence interval.

Select the level of permissible error. You should keep in mind the consequences of the decisions, taken after arrange the survey results. In many studies the permissible error is within ± 10 ;

In cases, where the forthcoming decision based (partially) on the results of the study requires a low level of permissible error, an error of $\pm 5\%$ or less can be used.

Fact Sheet III "Measure of Analysis".

The measure of analysis chosen for the study is essential. It is important because of: the size of the list from which the sample is drawn and therefore also the decision on the sample size; choosing the elements that will enter it, what is required of each respondent; the analysis of the answers of respondents in the sample (ie those surveyed).

General Measurement Tool (GMT)

The most important thing for the effectiveness of the questionnaire is that it should be revised by users and adapted to meet the specific objectives. The general measurement tool allows organizations to select parameters to explore the information they need.

The process of "workover" suggests the following steps:

- Define the purposes of your survey;
- Review thoroughly GMT;
- Find out which points are relevant to your organization and the purposes of your survey;
- Identify the questions you want to ask and which are not included in the questionnaire;
- Formulate these questions and add them to the extra section for questions;
- Modify the formulation of the introductory part so that it corresponds to the purpose of your organization;
- It is advisable for the organization to carry out a pre-test of this revised tools before using the questionnaire. This test would show what else needs to be changed before the questionnaire is released so that mistakes are avoided.

Dictionary

Absolute Frequency - expresses the number of units in the statistical aggregation, that are distinguished by any sign.

Variation/Dispersion - a measure of the difference between the cases of a given aggregation of variants of an attribute. There are several types of dispersion measures. The simplest measurement approach is the difference between maximum and minimum.

General aggregation - encompasses cases of the studied mass phenomenon.

Confidence interval - (95 or 99%) - allegation of the distribution of values in the studied plurality of objects based on the limited information obtained from a random final sample.

Dependency - relationship between two or more variables. When dependency is expressed mathematically, it is called a function.

Extract - selection of elements or components subject to analysis to measure certain characteristics and dependencies.

Tool - approach/tool for task implementation, analysis and research.

Coefficient of the variability - dispersion is the square of the standard deviation.

Method - selection of procedures and actions to perform a task.

Methodology - an aggregation of methods and principles used for the purposes of analysis and research in a given area of knowledge.

Moderator - a person who leads a discussion or conference, monitors the consistency of the speeches, generates summaries.

Statistical deviation - shows the difference between the mean and the real value as a result of statistical measurements.

Relative frequency (statistical probability) - probability where n is the volume (number n of statistical units) of the statistical aggregation.

Representative aggregation (sample) - encompasses part of the cases of the general aggregation and by its characteristics are deduced the characteristics of the general aggregation.

Respondent - a person, had been taken in a sociological survey and who has been given a research or interview.

A standard estimation error ($s_{y/x}$) is a statistical metric that informs about the magnitude of the deviations of the actual y values from the graph of the function (ut). It is expressed in the units of the dependent variable y and is calculated by the formula.

Statistical error - result of the estimated standard deviation.

Statistical data - collected, organized and analyzed information needed to investigate a phenomenon. To show the measured data (numbers) from the statistical groups observations, statistical rows are used when the statistical group is divided into upper and lower limits.

Statistical units - these are the individual units (cases, agents) which form the statistical aggregate. By statistical groupings, the individual statistical units are distributed into groups, differentiated of the observed characteristics characterizing the aggregate.

Statistical signs - express the properties (qualities, manifestations and relationships) of the individual units of a given phenomenon. In general, the statistics are qualitative and quantitative.

Statistical aggregate - this is an aggregate of large numbers of cases, which characterize the mass phenomenon.

Frequency - the magnitude of the studied phenomena, expressed in frequency.

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