



REPORT OF THE INTERREGIONAL MEETING ON PROMOTION OF ENVIRONMENTAL HEALTH

WHO, Geneva, 20 - 26 May 1987

110.3

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1. Introduction

Director EHE, who acted as Chairman, welcomed the participants to the Interregional Meeting. He pointed out that past interregional meetings were devoted overwhelmingly to issues related to programme 11.1 Community Water Supply and Sanitation. However, participants at the Lima meeting¹ had agreed that it would be most appropriate to address the problems of environmental health hazards at the next interregional meeting and to discuss "guiding principles on how the Organization's technical cooperation can be of greatest use and relevance to Member States in the control of environmental pollution which is being faced by virtually all countries and not merely by countries in the industrialized world where measures of control and abatement are already actively under way. The developing countries and with them, WHO, are virtually sitting on a time bomb." The Lima meeting had further proposed that "the time for the next interregional meeting might be during the first half of 1987 when consultations will need to take place in any event regarding the further implementation of EHE programmes under the Seventh General Programme of Work and what will emerge for priority attention during the Eighth General Programme of Work". This meeting, it was concluded, therefore was timely and would focus on the discussion of a document of an Organization-wide strategy on technical cooperation for Control of Environmental Health Hazards. Furthermore, there was the need to finalize the activity tables (Chapter 6) of the Global Medium-term Programme for Programme 11, Promotion of Environmental Health and to discuss other issues of relevance to both headquarters and regional offices including the proposed Management Survey of Programme 11.

The list of participants is attached as Annex I and the Agenda for the meeting as Annex II.

2. Strategy for Technical Cooperation in Programme on Control of Environmental Health Hazards (CEH)

In opening the discussion, Mr Ozolins introduced the technical cooperation strategy document which had been in preparation for almost two years. It was being developed for a number of reasons. During the past five or so years, there had been increased demands on WHO to provide support to Member States in dealing with chemical and other environmental problems affecting health. A survey conducted in 1983/1984 by WHO had clearly indicated the serious lack of capability which existed in many of the Member States for environmental pollution control and chemical safety. These results had been corroborated by the WHO Expert Committee on Environmental Pollution Control in Relation to Development (TRS 718). The Committee had concluded that while progress had been made by WHO and others in improving and increasing the scientific information on health hazards of environmental pollution, very little, or no, progress was evident in countries in preventing or controlling these problems.

The development of an Organization-wide strategy on technical cooperation for Control of Environmental Health Hazards was needed to concentrate and possibly expand the resources of WHO for this purpose. During a wide range of discussions and consultations held over the past few years, it was felt that such a strategy, if agreed to by the EH offices in the Regions and headquarters, would enable us to:

- (i) focus our activities on agreed priority issues;
- (ii) better align the activities of headquarters with those of Regional Offices;
- (iii) advocate more forcefully for action at country level in the CEH area and to better inform Member States of possibilities for collaboration with WHO;
- (iv) identify areas of work where Regional Offices and their technical centres could collaborate with one another;

¹ Monitoring and Evaluating the Strategy for WHO's Participation in the International Drinking Water Supply and Sanitation Decade, Report on an Interregional Meeting, Lima, Peru, 2-7 December 1985, CWS/86.1.

- (v) see more clearly what technical cooperation activities are the responsibilities of the programmes on pollution control and on chemical safety;
- (vi) better inform other Agencies of WHO programmes in this area.

The present strategy document is meant to encompass all technical cooperation activities carried out within the CEN programme. Thus, it includes the relevant parts of the International Programme on Chemical Safety as well as those which are concerned with environmental pollution control and are outside IPCS. Having a common strategy should provide for a more coherent delivery of technical cooperation and alleviate some of the confusion which has existed in the past. It is expected that this strategy will also be valid during the 8th GPW when the CEH programme is split into two WHO programmes, namely, 11.3 Health Risk Assessment of Potentially Toxic Chemicals and 11.4 Control of Environmental Health Hazards.

The strategy document which was entitled "Control of Environmental Health Hazards - a WHO Strategy for Technical Cooperation with Member States" had already been revised in view of the comments made by the Regional Offices. The current meeting made a final review of the various elements of the strategy. Major points of discussion which resulted in a modification of the strategy document are summarized in the following paragraphs.

It was felt that more emphasis needs to be placed on health sector involvement and on preventive action and that the introductory sections should reflect this view. The importance of TCDC in environmental hazards control work was underscored and was made more explicit as one of the guiding principles for the implementation of the strategy. Additional guiding principles relating to community education on environmental preservation and to transfrontier pollution problems were introduced. These guiding principles are meant to provide overall direction for further programme development.

In the part of the document which outlines the technical cooperation activities of the Organization, environmental project formulation including mobilization of internal and external resources was considered as an important activity which should be clearly identified. One additional item, namely, localized hazardous environmental pollution sources was added to the listing of main pollution/chemical safety problems since such situations existed in all Regions and required urgent action. The problem area dealing with biomass combustion was modified to also include domestic coal use since it was a pressing problem in some countries. While contamination of food stemming from pollution of water and soil is a major source of human exposure, it was decided that this not be included within the strategy since a separate WHO programme on food safety dealt with this problem. It was agreed, however, that the document should clearly refer to the food safety programme and other WHO programmes with which close linkages need to be maintained. There was also agreement that the support provided by other international organizations and collaborating centres be clearly stated.

In reviewing the elements of the strategy dealing with chemical safety problems, the meeting decided to combine the descriptions of technical cooperation concerning chemical accidents and related poisonings.

The possibility of indicating priority ratings among the different problem areas was considered. It was agreed that this was difficult and could not be done since the priorities varied from Region to Region and from one country to the next. The listing of main problem areas was, however, rearranged to give, in a general sense, an overall idea of the importance of the different environmental problems to health.

There was a strong consensus that the strategy document, as modified by the meeting, provided a sound basis for further programme development and the participants endorsed its content.

It was indicated that the document will be used for development of Regional strategies and for planning of country and inter-country projects. Each Regional Office would need to use it in ways consistent with the already existing plans and, in some cases, Regional strategies.

It was recommended that the document be issued as soon as possible as an EHE document. It was also recommended that it be published and made available in English, French and, if possible, other languages in order to facilitate its wide application and use.

The implementation of the strategy was the most important challenge now to the EH programme, and it was agreed that a periodic review of its implementation should be undertaken. It was also confirmed that a review of the status of national environmental pollution control programmes would be undertaken in 1988/1989 as was done in 1983/1984, which could contribute to the assessment of progress being made.

The meeting was then briefed on each of the Regional Office programmes in the area of environmental health hazards control. The important role of the Regional technical centres was highlighted and their role in programme implementation discussed. A substantial rise in the relative importance of the CEH programme has been noted in essentially all of the Regions and the need for close collaboration among the different levels within the Organization was emphasized.

3. Preparation of Programme and Budget for the Biennium 1990/1991

It was considered useful to have a brief review of the needs and plans of the Regional Offices in respect to programmes 11.3 (Health Risk Assessment of Potentially Toxic Chemicals) and 11.4 (Control of Environmental Health Hazards) as a basis for preparation of the programme and budget for 1990/1991. This discussion was organized according to the main problems identified in the strategy document.

The problem area concerning environmental considerations for development was thought to be extremely important for the health sector and WHO. Many activities have already been carried out on such topics as environmental health impact assessment, land use planning and regional development projects. Others are being planned in the Regions and globally. An example is the currently agreed inter-agency (UNEP/WHO/IAEA/UNIDO) project on assessment and management of health and environmental risks of energy and other complex industrial systems. This project will involve case studies in the countries, and information regarding these will be sent to the Regional Offices soon. This project is based on inter-sectoral cooperation which is a most important aspect when dealing with environmental considerations in development planning.

It was noted that WHO should establish close links with the development institutions, including Regional development banks, to promote the incorporation of environmental health considerations in their development programmes.

It was agreed that WHO should review this entire programme area to better define its policy and aims and to outline the types of activities WHO should pursue. Since all Regional Offices are actively involved, more exchange of information among them would be useful. EHE/HQ will undertake this review in close consultation with the Regional Offices.

Drinking water quality is an area where much more needs to be done. The updating of WHO Drinking Water Quality Guidelines and workshops regarding their application were singled out for attention. Furthermore, the development of surveillance systems, particularly for rural areas, and national training courses were thought to be priority needs. Legislation and standards development, also, were listed as tasks which the programme should address.

The tasks associated with fresh water quality are broad and varied, and it is difficult to outline priorities. It was agreed, however, that the health issues of water resource development and use need to be highlighted in future programmes. Further development of GEMS/WATER, management strategies for land use and transboundary pollution problems were felt to be among the major issues to be considered.

Coastal water quality problems are being addressed in all of the Regions, particularly through the UNEP-coordinated Regional Seas Programme. Important considerations are tourism, land-based sources, pollution by heavy metals and design of marine outfalls. Strengthening of laboratories and training of staff were considered important.

Urban air quality is considered a priority problem, particularly in those Regions where rapid urban growth and associated increases in transportation and industrialization are taking place. Participation in the GEMS/Air project was considered a useful means to assist countries with developing effective air monitoring operations. The GEMS/Air project is now using the accumulated data base to produce assessment reports, and these were considered useful in drawing the attention of governments to the most pressing problems for control action. Also, more specialized Regional reports on urban air conditions were thought to be useful in formulating technical cooperation projects dealing with control of industrial pollution.

Environmental health data on the combustion of biomass fuels and coal indoors show that this is a problem of major proportion that requires urgent attention. A draft paper outlining a programme of proposed activities to deal with this problem to be undertaken by WHO has recently been sent to the WHO Regional Offices. In addition to reviewing the paper, Regional staff was requested to indicate priority items for action as well as whether these can be incorporated in the Regional EH programme, possibly in 1990/1991. In view of the action taken already, no further discussion was considered necessary at the time of the meeting.

Hazardous waste management is already of high priority in the European, American and Western Pacific Regions and will become so in all Regions. Regional activities ranging from management workshops to training of national staff in various aspects of hazardous wastes will be required. Reference was made to the WHO/World Bank/UNEP technical manual for hazardous waste disposal which is currently being finalized. This manual should provide a major input into inter-country and country activities.

The health risk brought about by localized hazardous pollution sources needs urgent action. Additional consideration is required on the types of actions WHO could take. Greater awareness is needed in some countries of these situations, and some epidemiological studies may be required to assess the situation. It was important to remember that it was not enough to only identify and assess the hazards; practical solutions must also be proposed for remedying the situations. It was agreed that case studies might be a good vehicle for exchanging experience and fostering TCDC.

Safe use of chemicals was a new area for most regions and it was foreseen that it would be of growing priority in the future. Several regional workshops (SEARO; WPRO; AFRO) on chemical safety and dealing with the overall subject of chemical hazards, including pollution, have been or will be held in order to help selected Member States to better identify their problems and needs in this field. It was agreed that a similar workshop for the Eastern Mediterranean would now be timely. Effective dissemination and use of information arising from activities of the IPCS was considered.

There is growing concern in all regional about chemical accidents and the need for emergency preparedness. Institutional building in Member States to respond to chemical accidents was an important element of UNDP financed projects on chemical safety in the European and South-east Asian regions. A methodology will be developed for use in Member States to assist them in better identifying problems relating to poisoning by chemicals. A computerized information system on diagnosis and treatment of poisonings is to be developed in order to improve capabilities of developing countries to respond to poisonings.

Radiation protection has gained importance as a result of the Chernobyl accident. There are now requirements for strengthening national programmes in essentially all of the Regions. With the exception of the European Region, support from HQ will be required to meet some of these requirements. Build-up of surveillance systems and training are among the major needs.

4. Review of Global Medium-term Programme (1990-1995) for Programme 11 - Promotion of Environmental Health

4.1 Programme 11.1 Community Water Supply and Sanitation

The meeting reviewed the draft document for Programme 11.1. This document had been circulated to Regional Offices and Headquarters Divisions in April 1987 and comments had been received, which were taken into account in the revision. Some amendments were made to the

Specific Targets section, and the activity tables were reviewed in detail. Several of these were modified or consolidated in the light of discussions and regional contributions, and consensus was reached over the involvement of Regional Offices and Headquarters in each activity, and the various linkages with other programmes and agencies. After the review was completed, the meeting agreed to the content of the MTP.

4.2 Programme 11.2 Environmental Health in Rural and Urban Development and Housing

It was agreed that the draft document provides a good overview of the programme for the period 1990-1995 and that it was consistent with the policy basis of the programme and the Eighth General Programme of Work. Suggestions were made for editorial changes in sections 1, 2 and 7. Agreement was reached on expansion of the specific objectives as follows (the additional wording is underlined):

3. Specific Objectives

To promote human health through measures to improve living conditions (habitat), and to mitigate any adverse environmental and health impact of socioeconomic development actions recognizing the reciprocal and interdependent relationship between better living conditions, improved health, increased productivity and viable socioeconomic development.

The activity tables were reviewed in detail. The item on solid wastes management was built up, and the involvement of Regional Offices and headquarters was noted for each listed activity. After the review was completed, the meeting agreed to the content of the MTP.

4.3 Programme 11.3 Health Risk Assessment of Potentially Toxic Chemicals

It was observed that the programme had two main thrusts namely a research element to establish assessments of the risks to health and the environment of chemicals, and a technical cooperation element to help improve national capabilities to achieve chemical safety. It was suggested that activity table "risk evaluation of priority chemicals" should precede table "methodology for health risk assessment". It was considered that as regards evaluations of toxicological risk it was important for WHO to have a unified position, and that while regions would help guide selection of priority chemicals and make an input, the basic task of evaluation would be undertaken at headquarters. Regions would be fully involved in the dissemination and use of these toxicological evaluations of chemicals and in their adaptation to specific problems in the region.

Concerning technical cooperation, the meeting considered that while the specific activities of the draft programme reflect the agreed strategy a rearrangement of the material under one table "development of national capabilities to achieve chemical safety" would more logically reflect needs of Member States in this field as follows: the general capabilities required to manage chemical risks through establishing policies, legislation, regulations and control mechanisms, dissemination of information as well as improving publication awareness; the development of human resources; the prevention and response to chemical accidents; the prevention and response to poisonings by chemicals; and the identification of health effects of exposure to chemicals. After the review was completed, the meeting agreed to the content of the MTP.

4.4 Programme 11.4 Control of Environmental Health Hazards

It was agreed that the draft document provided a good overview of the programme for the period 1990-1995 and that it was consistent with the agreed upon strategy. Suggestions were made to highlight the preventive aspects and the role of community education. The activity tables were reviewed in detail, and the involvement of Regional Offices and Headquarters was noted for each of the activities listed. It was clear that for most of the activities, WHO involvement at all levels was required. After the review was completed, the meeting agreed to the content of the MTP.

4.5 Programme 11.5 Food Safety

It was agreed that the draft document provided a good description of the programme and that the activity tables reflected the comments made by two Regional Offices and the regional MTPs submitted by four Regional Offices. The comments made by EURO concerning chapter 2 (situation analysis) on chemicals in food still need to be incorporated.

The meeting reviewed in detail the activity tables and suggested several amendments. Decisions were made concerning the involvement of Regional Offices in each individual activity. In particular for activities listed under specific targets 1 (National Infrastructure Development) and 2 (Awareness Promotion including health education in food safety) participation of Regional Offices together with HQ was required while many of the activities listed under specific target 3 (Development and Transfer of Information and Methods) were more of HQ concern. After the review was completed, the meeting agreed to the content of the MTP.

5. Management Survey on Environmental Health Programme

Director EHE explained the proposal to conduct a Management Survey regarding the managerial framework of the Environmental Health Programme. The survey which is agreed upon in principle by the Director-General of WHO will address four main issues, namely: (1) Organization and Management of EHE/HQ; (2) Contribution by Regional Offices; (3) Future Technical Strategy of EHE; and (4) Implications of Future Strategy. The identified managerial framework should in particular facilitate decision making and maximize effectiveness and efficiency of programme delivery at global, regional and country levels.

To achieve the objectives fully, it would be essential to extend the scope of the Management Survey to include not only the HQ component of the Programme but also the regional programmes. The Regional Offices were therefore given the opportunity to participate in the Survey and had been informed officially through a memorandum from Director EHE of 30 April 1987.

In general the Survey was considered useful and timely by the regional staff and was fully supported by EURO and WPRO. The latter, however, stated that in view of the present EHE staff situation at WPRO a decision on the timing of the Survey to be conducted in WPRO should be deferred.

In response to a query from the staff member from AFRO regarding the future technical strategy of the EHE Programme, Director EHE informed the meeting that he was planning to convene a brainstorming session with up to six experts from outside the UN system from developing and developed countries who have a broad view on environmental health issues. During this brainstorming session, to be held in the second half of 1987, major environmental health issues expected to be dominant in the next decade could be identified and an attempt made to prioritize these issues. This could lead to a discussion on how WHO could best respond to these issues taking into account manpower and other resources including the necessary staff profile and organizational set up. The conclusions and recommendations made by this group may well lead to a modification of the future technical strategy of the EHE Programme. It was felt by the staff member from AMRO that it was necessary for the participants of this brainstorming session to be aware of the particular conditions of regional offices/regions and that the timing of this session was important. It was further noted that the Survey be carried out taking into account the views of both management and technical staff.

The staff member from WPRO proposed that management courses for EHE staff be held as it was done for other professionals. These courses could be held at places such as CEPIS and PEPAS. Manager FOS requested that the regional food safety programmes including their organizational set up be reviewed as part of the Survey with a view to facilitating programme delivery at regional and country level taking into account the delineation of responsibilities of FOS, NUT and VPH at headquarters and regional offices.

Director EHE requested the regions to inform headquarters of their decision to participate in the Survey not later than 31 July 1987.

6. Informatics Management

The development of improved informatics systems in the environmental health programmes was discussed briefly after an introduction by Director EHE and Dr Kjellstrom, PEP. There is great potential for improved efficiency of information exchange within WHO and between WHO and Member States, if computing facilities and computing applications are developed systematically. This will involve not only Headquarters and Regional Offices, but also country engineers, WHO representatives, national institutions and government agencies.

Certain WHO standards for hardware and software have already been developed by ISS/HQ in cooperation with regional offices. The proposed hardware is IBM personal computers or IBM-compatible personal computers. The proposed software is SAMNA or MULTIMATE for word processing; LOTUS or dBASE for databases/spreadsheets; and CARDBOX for address lists and bibliographies. Proposals for other applications are being developed and EHE is working on applications of particular interest to our programmes.

The focal point for Informatics in EHE/HQ is Mr I. Ahman, CWS and each programme has a designated staff member liaising with Mr Ahman.

With the assistance of ISS/HQ, a feasibility study for further developments is currently being prepared. Information will be sent to Regional Offices in the near future.

7. WHO Guideline Values on Derived Intervention Levels

The meeting was informed of PEP's work on the development of the WHO Guidelines on Derived Intervention Levels for radionuclide contamination of environmental media. A consultation had been convened in April 1987 to agree upon an approach and to prepare a draft guideline document. This now needs to be reviewed by governments in order that their comments can be taken into account when the guideline is finalized by an expert meeting in September of this year. It was agreed that the draft document would be sent to the Regional Offices for distribution to selected governments within each Region. It was planned to have the document dispatched from Geneva before mid-June; the comments should be received by the end of August.

8. Objectives-oriented Project Planning Process (ZOPP)

Dr K. Erbel, Division Head Water Resources Development, German Agency for Technical Cooperation (GTZ), presented ZOPP, its application and mechanism. The presentation was supported by a set of documents distributed to all participants.

ZOPP is a brainstorming methodology aiming at defining project objectives and at identifying and eliminating risk factors at various stages in the project cycle, beginning with project design. It is used by GTZ to analyse all new projects and in some cases to determine the status - i.e. possible need of change in direction - of ongoing projects. ZOPP consists of three inter-supportive elements:

- the method which is the guidelines for work in the planning group;
- the team approach as the framework for studying multisectoral problems; and
- the visualization technique, which is used to document the contributions by the individual participants and the results of discussions.

ZOPP is used to clearly define project objectives through a "causes and effects", or problem analysis. All groups affected by a project should be represented in the ZOPP exercise, so as to contribute their views based on experiences and forecasts, or "assumptions", of expected project impacts. Objectives and output results are formulated into quantitative indicators which can be measured against inputs or costs. A Project Planning Matrix is attached as an example in Annex III.

A subsequent discussion session praised ZOPP in general, but also drew attention to some of its shortcomings, mainly: the "qualitative" aspects of a project, or the unquantifiable social elements, are not easily discernable by the method; and the rather heavy time inputs needed by project evaluation staff and participants to go through up to 10 ZOPP exercises in the course of a project execution, of which a session may last from 1 day to 2 weeks.

9. Closing Remarks

The participants agreed that this meeting had been timely and necessary and had fully achieved its objectives. In response to Director EHE's query on suggestions for improvement, it was felt that more time for individual discussions should be set aside. Moreover, a specific technical subject could be selected in advance and discussed in detail. It was unfortunate that the planned technical discussion on environmental health indicators could not be held during this meeting due to time constraints.

It was agreed that an interregional meeting of environmental health staff is necessary and should be held at least every two years. Director EHE closed the meeting thanking all participants for their active and valuable contribution.

INTERREGIONAL MEETING ON PROMOTION OF ENVIRONMENTAL HEALTH

WHO, Geneva, 20-26 May 1987

LIST OF PARTICIPANTS

Headquarters

Dr J.-P. Jardel, Assistant Director-General
Dr W. Kreisel, Director, Division of Environmental Health
Mr M.A. Acheson, Manager, Community Water Supply and Sanitation
Dr F. Käferstein, Manager, Food Safety
Dr M. Mercier, Manager, International Programme on Chemical Safety
Mr G. Ozolins, Manager, Prevention of Environmental Pollution
Mr R. Novick, Responsible Officer, Environmental Health in Rural and Urban
Development and Housing
Dr R. Helmer, Prevention of Environmental Pollution

Other Divisional staff participated for specific parts of the meeting

AFRO

Mr M. Koussitashev, Programme Manager 2

AMRO

Mr C.H. Dávila, Environmental Health Program Coordinator

EMRO

Dr M.I. Sheikh, Chief, Environmental Health Programme

EURO

Dr S. Tarkowski, Acting Director, Environmental Health Service

SEARO

Mr M.L. Gupta, Chief, Promotion of Environmental Health

WPRO

Dr Liu Guo-Bin, Director, Drug Policy, Environmental Health and Health Technology

INTERREGIONAL MEETING ON PROMOTION OF ENVIRONMENTAL HEALTH

WHO, Geneva, 20-26 May 1987

MEETING AGENDA

PART ONE: Strategy for Control of Environmental Health Hazards
(20-22 May 1987)

1. Introduction of objectives of this part of the meeting and of the strategy document (20 May a.m.)
2. Review and, as necessary, revision of the approaches and contents of the strategy document (20 May a.m.)
3. Implementation of the strategy within the programme budget biennium 1988/89, including general approaches and specific activities (20 May p.m.)
4. Review and finalization of the Medium-Term Programme 1990/95 for the programmes on:
(21 May, all day)
 - (i) health risk assessment of potentially toxic chemicals (new 11.3)
 - (ii) control of environmental health hazards (new 11.4)
5. Preparation of programme budget for biennium 1990/91 and beyond (22 May a.m.)

PART TWO: General programme aspects (22-23 May 1987)

1. Introduction of the Objective-Oriented Planning Process, with the participation of an external moderator and other HQ divisions (22 May p.m.)
2. Review of Environmental Health Indicators, with the participation of a EURO expert (23 May a.m.)

PART THREE: Medium-term Programmes 1990/95 (25-26 May 1987)

1. Review and finalization of MTP for programme 11.1: CWS (25 May a.m.)
2. Review and finalization of MTP for programme 11.2: RUD (25 May p.m.)
3. Review and finalization of MTP for programme 11.5: FOS (26 May a.m.)
4. Review and finalization of general PEH section of the MTP (26 May a.m.)

<p>1977 Dutch Government Co-operation Dutch Embassy D-1000 Brussels</p>	<p>PROJECT PLANNING MATRIX (PPM)</p>	<p>Project Title: Cultural Production in Sudo Province Project No: 472 Est. Project Duration: 5 years Country: Guatemala</p>	<p>PPM prepared on (date): 1985</p>
<p>SUMMARY OF OBJECTIVES/ACTIVITIES</p>	<p>OBJECTIVELY VERIFIABLE INDICATORS</p>	<p>MEANS/SOURCES OF VERIFICATION</p>	<p>IMPORTANT ASSUMPTIONS</p>
<p>OBJECTIVE: To reach a goal in which the project contributes to the wheat production in the Sudo Province doubled.</p>	<p>INDICATORS that are reached: Wheat production in Sudo (quality reference '81) is (in ct): '82 181 '83 185 '84 188 '85 191 '86 195 '87 198 '88 201 '89 204 '90 207</p>	<p>Quarterly Bulletin of the Statistics Dept. of the Min. of Ag. ad random tests by project staff.</p>	<p>For Sustainability of Overall Goal 1. World Bank Project 47/0111. Its objectives for wheat yield and increase the average yield. 2. The rapid increase of agricultural production is not essentially influenced by changes sectoral and intersectoral priority setting of the M. of Ag. and the Government. 3. The M. of Ag. will accept of suitable the M. of Ag. to other areas of lowland. 4. See points 1 and 2 below (Results).</p>
<p>PRELIMINARY: Drought animals in the Sudo Province effectively used in agriculture.</p>	<p>INDICATORS which show the achievement of a success of PP: The selected drought animals are used in the following numbers: '82 181 '83 185 '84 188 '85 191 '86 195 '87 198 '88 201 '89 204 '90 207</p>	<p>Nearly counts by project staff. ad random tests by animal husbandry expert.</p>	<p>For achievement of the OG: 1. See point 1 below (Results) 2. See point 3 below (Results) 3. See point 5 below (Activities)</p>
<p>RISKS/SOURCES: 1. Effective combination of animal breeds, cultivation methods and local conditions determined. 2. Farmers cooperatives in operation. 3. Farmers trained 4. Animals distributed and trained 5. Agric. implements provided to the farmers (to-be satisfied)</p>	<p>INDICATORS, describing the results: 1. Before 12/82, one or more combinations determined, which suit the Sudo Province's conditions, so that a 100% increase of yields of at least 5 tonnes is reached by using animal husbandry cooperatives with sufficient level of organization, functioning and agricultural implements. 2. A number of farmers with positive results participate in the training of knowledge and skills. 3. A number of animal breeds broken and trained for field work at point 1 in the area, with the help of credits, cash repayments from receiving funds a surplus sugar in 3/81, devoted to the cooperatives during the first year. 4. Sufficiently good breeders are available. 5. M. of Ag. provides the appropriate production facilities (tools, services) provided to the cooperatives at point 1 in time.</p>	<p>1. Test data. 2. Regular reports by project staff. 3. Records from trainer teams. 4. Records from animal training sections. 5. Records from Credit Sections. 6. Records from the M. of Ag. for the section for production inputs.</p>	<p>For the achievement of the PF: 1. Weather conditions (e.g. rainfall). Temperature remain on normal levels in the whole Province. 2. Farmers accept using the animals and implements in the recommended way. 3. Major economic factors (prices of means of production, price of wheat) do not in general contribute to the increase of yields within a 5% range for this year prices. 4. See point 5 below (Activity level).</p>
<p>ACTIVITIES: 1.1. Build up state agricultural station. 1.2. Contact results, obtain necessary and credits. 2.1. Design cooperatives organization 2.2. Implement recruiting campaign for farmers. 2.3. Start cooperatives and assign starting capital. 2.4. Distribute implements and provide good breeders. 3.1. Conduct training course, and implement it. 3.2. Select necessary number and breeds of animals. 3.3. Develop credit system and implement it. 3.4. Buy animals, train and deliver them. 3.5. Estimate necessary agric. implements. 3.6. Coordinate availability of implements with M. of Ag. 3.7. Depending on their progress, provide farmers with implements.</p>	<p>SPECIFICATION of Quantities and Units/Costs for each individual activity: Total Budget: (in 1000 A) Running Costs 5 5 5 5 5 5 Total 55 55 55 55 55 55 (See attached budget for Personnel and Cost details).</p>	<p>Information from the accounts.</p>	<p>For obtaining the results: 1. At least one practical (workable) combination (of animal breed, cultivation method and local conditions) can be found (inter-sectable objectives). 2. M. of Ag. (culturally acceptable) to joining a cooperative. 3. Sufficient good breeders are available. 4. M. of Ag. provides the appropriate production facilities (tools, services) provided to the cooperatives at point 1 in time. 5. M. of Ag. provides the appropriate production facilities (tools, services) provided to the cooperatives at point 1 in time.</p>

DEVELOPMENT HYPOTHSIS

MANAGEABLE FACTORS

If these results are obtained, then the project purpose is achieved.

If these activities are carried out, then these results are obtained.

If the project outputs are achieved, then a contribution is made towards the goal.