Annex 1

REGIONAL EXPERT CONSULTATION ON PLANT, ANIMAL AND HUMAN NUTRITION; Interaction and Impact

(Damascus, Syria, 20 to 23 September '2003)

FINAL PROGRAMME

FRIDAY 19 SEPTEMBER 2003

- Arrival of Participants

SATURDAY 20 SEPTEMBER 2003

Opening Session

08:30 – 09:00 Registration of Participants
09:00 – 10:30 Inauguration of the Consultation
- Opening Remarks: FAO / Co-sponsors
- Opening Remarks: Host Country

10:30 – 11:00 Coffee Break

Session I General Overview

11:00 – 11:30 Plant, Animal and Human Nutrition: *an Intimate Relationship (G. Hamdallah / Sr. Soils & Fertilizers Officer, /FAO-RNE Regional Office in Cairo)*
11:30 – 12:00 Soil and Water Pollution from Mineral Fertilizers: *a Focus on the Near East (H. Nabhan / Sr. Soil Management Officer FAO-AGL)*
12:00 – 12:30 Food Chain: the Impact on Human Nutrition *(Ms. F. Hachem/ Nutrition Officer/FAO-RNE*)
12:30 – 13:00 General Discussion of Session I
13:00 – 15:00 Lunch

Session II Soil and Plant Nutrition Issues

15:00 – 15:30 Selenium in Soils and Plants: the Effect on Animal and Human Nutrition *(I. Bashour, Prof. of Soils and Plant Nutrition at the American University of Beirut, Lebanon)*
15:30 –16: 00 Current Status of LADA Programme and its Future Prospects *(H. Nabhan / Sr. Soil Management Officer FAO-AGL)*
16:00 – 16:30 Oman Country Report (Mohamed Al-Hashimi / Ministry of Agriculture and Fisheries in Oman)
16:30– 17:00 General Discussion of Session II

SUNDAY 21 SEPTEMBER 2003

Session III Micro-nutrient Deficiency and Human Nutrition

08:30 – 09:00 Syrian Experience in Dealing with Micro-nutrients Deficiency, particularly Iodine and Iron, A UNICEF Approach (*Dr. Iman Bahnasi, Project Manager of "Support to National Policy and Development", UNICEF, Damascus, Syria)*
09:00 – 09:30 Role of Diet Particularly Micronutrients on Human Health *(Dr. M. El-Guindi, MD. Prof. of Pediatrics and Nutrition, Cairo University, Egypt)*
09:30 – 10:00 FAO's Approach to Human Nutrition (Juliet Aphane, Nutrition Officer, ESNA, FAO, Rome)
10:00 – 10:30 Role of Zinc in Plant Growth and for Enhancing Animal and Human Health *(Prof. M. Malakouti, Director of Soil and Water Research Institute, Tehran, Iran)*
10:30 – 11:00 Coffee Break

Session IV Animal Nutrition and Its Impact on Human Nutrition

11:00 –11:30 Overview of Agricultural, Animal Production, Human Nutrition and Health Relationships *(Dr. Nacif Rihani, Animal Nutrition Specialist, FAO Consultant, Rome)*

11:30 –12:00 Nutrient Requirements of Awash Sheep for Lactation (Dr. M. Dada, Animal Nutrition Specialist /ACSAD, Damascus, Syria)

12:00 –12:30 Animal Feeding for Producing Healthy Animals (*F. El-Yassin; Prof. of Animal Nutrition; Aleppo University, Aleppo, Syria)*

12:30 – 13:00 General Discussion of Session IV

13:00 – 15:00 Lunch

15:00 – 17:00 Country Reports

MONDAY 22 SEPTEMBER 2003

- Field Trip

TUESDAY 23 SEPTEMBER 2003

08:30 – 09:00 Role of Plant Micro-nutrients in Producing Quality Food Crops (*M. El-Fouly, Prof. of Plant Nutrition at the National Research Centre in Cairo, Egypt)*

09:00 – 09:30 Country Reports

09:30 – 10:00 Assignment of 3 Working Groups

10:00 – 13:00 Group Discussions

13:00 – 15:00 Lunch

15:00 – 16:00 Drafting the Consultation Conclusions

Session V Concluding the Consultation

16:00 –17:30 Conclusions and Recommended Follow-up Action

WEDNESDAY 24 SEPTEMBER 2003

- Departure of Participants

Annex 2

Expert Consultation on Land Degradation, Plant, Animal and Human Nutrition: *Interaction and Impact*

Damascus, Syria (20-23/9/2003)

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Annex 3

CONCLUSIONS

The Regional Expert Consultation on "Land Degradation, Plant, Animal and Human Nutrition" deliberated for the period of Sept 20-23 '2003 in Damascus, and reached the following conclusions.

Conclusions of Group I: Soils/Fertilizers and Plant Nutrition Issues

1- The Region is faced with various types of land degradation, including chemical soil degradation, nutrient depletion, nutrient imbalance and soil pollution.
2- Soil fertility is a key element for agricultural production, where commercial fertilizers use was behind over 55% of the increase in the agricultural outputs during the past 30 years, and thus they should be used in a balanced formula and according to the plant needs.
3- Imbalanced fertilization in many Near East countries is a main reason for the low crop yields and inferior quality of products, leading to soil pollution with nitrate (if N is in excess); and acceleration of micronutrient deficiencies (if P is in excess).
4- Limited use of K and micronutrient fertilizers is wide-spread in the Region, constituting a significant constraint to achieving optimum crop yield and quality-products for markets.
5- Plant contents of nutrients, particularly micronutrients, have direct impact on feed quality for animals and influencing their health; while both affecting food chain for humans and their health.
6- Very little information is available from the Region on the effect and role of micronutrients, such as: Zn, Fe, Mn, Cu, Mo, B) on food and feed quality.
7- Although Selenium is not proved to be essential for crops; several human and animal health problems in the Region could be related to Selenium deficiency or toxicity in animal feeds. Mo is also a limiting plant nutrient especially for leguminous crops, but only little work was done on it.
8- A good number of commercial fertilizers complexes were established in many countries, but they only manufactured a limited number of products, with clear emphasis on Nitrogen production (especially urea) and not adequate attention given to potassium or compound fertilizers and micronutrient carriers.
9- Chemical fertilizers producers are export-oriented, in general, which makes their interest in the demand requirements of the local market basically weak; in addition to an Ad-Hoc relationship with National Agricultural Research & Extension Services.
10- Research and extension programmes, in most countries of the Region are facing real constraints related to weak linkages between the two; in addition to the severe limitations of funds and other resources.

Conclusions of Group II: Animal Nutrition and Health

1- The need is obvious for extending research and studies related to optimal animal nutrition requirements to include conformity with established feed standards and taking into consideration the feed quality and its effect on the content and quality of milk and meat products.
2- There is a definite need for adoption of appropriate principals of animal nutrition and technology for producing value-products for human consumption, particularly protein and fat contents of animal products.

3- Most countries lack the technology and legislation for quality control, methods for analysis of animal products to conform with international standards, such as Codex Alimentarius.
4- National and regional programmes for the Region are necessary to target improving the productivity and quality of animal products, with emphasis on training of cadres, diversification of production systems like small animal keeping (chicken, rabbits etc.) on the farm back yard.
5- Small scale producers are facing poor extension assistance and often are confronted with low market prices due to lack of processing facilities and market access, leaving a room for co-operatives to provide some needed services.

Conclusions of Group III: Human Nutrition and Health

1- The need to emphasize the quality of crops, particularly in relation to having adequate micronutrient contents; as well as to ensure year-round supply and availability of such products.
2- A good diversity of regionally acceptable and accessible crops is required to cover the whole spectrum of human micronutrient needs.
3- Some regional committee or association is essential to study and coordinate assessment studies on bio-availability of micronutrients in plants, animals, and human, to ensure the increase of enhancers and decrease of inhibitors in human nutrition.
4- A Web-based discussion group or a Network for the Region is necessary to facilitate communication and exchange of knowledge within the Region; as well as with other relevant organizations to ensure an integrated approach to this inter-disciplinary area for the evaluation of plant, animal, and human nutrition problems and study their intricate inter-relationships.

RECOMMENDATIONS

1) Conducting research programmes on fertilizer use rates, formulas, types, application methods, their impact on quality of the product; need to be strengthened, properly-designed, well-targeted, and co-coordinated with other disciplines of animal and human nutrition.
2) Improvement of micronutrients (especially zinc and iron) nutritional status in plants, animals and humans. Also studying the use of other nutrients such as S, Mg, and Ca should all be strengthened.
3) Using heavy isotope tracer techniques provides a good tool for fertilizer tracing and utilization efficiency studies.
4) Encouraging organic agriculture (for an added-value to products) and for the production and use of bio-fertilizers including mycorrhiza, thiobacillas and azotobacter bacteria, etc.
5) Review and develop fertilizer legislation and a national code of practice for each country that includes chemical and organic fertilizers, as well as for soil amendments and plant nutrition enhancement agents.
6) Promote the free movement and exchange of fertilizer products between countries of the Region.
7) Emphasis should be given to study the impact of fertilizers on crop quality under protected systems and pressurized irrigation.

8) Soil and water quality should be monitored regularly to assess any pollution risks to the environment.
9) Maintain Effective linkages between institutions with the Land Degradation Assessment Programme (LADA) should be established to protect the Region's limited resource base.
10) Encourage the integrated team work among researchers in plant nutrition, animal and human nutrition and health, at both national and regional levels for evaluating the effect of balanced fertilization on plant yield increase and on produce quality, and its direct bearing on enhancing animal and human nutrition and health.
11) Call on more co-operation between the Near East countries and the relevant regional and international organizations concerned with the above issues and concerns, particularly FAO, UNICEF, and WHO, for co-sponsoring of joint projects.