

DEVELOPMENT of A RESEARCH AND TRAINING CENTER for PLANT VIROLOGY IN TURKEY

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Executive Summary:

The Turkish agricultural economy and the associated research supporting this sector are in transition. Crop diversification and development of new markets and new crops is a high priority. Emphasis is being placed on the production of several different fruit and vegetable crops. Development of new resistant varieties depends on the plant breeders working in close cooperation with plant pathologists. The U.S. and Turkey have had a close cooperation in maintaining biodiversity conservation and germplasm sharing for more than seventy years. It is essential to continue this relationship for the benefit of both countries.

Turkey has university trained professionals in plant virology, but there is no facility in the country adequately equipped to meet the needs of growers and farmers. The Center will conduct research and also serve as a training location for both Turks and individuals from neighboring countries. Workshops and courses on methods of virus disease control and plant health certification will be presented. Turkey must meet certain plant health standards before it will be considered for the membership in the European Union.

Protecting the U.S. from the accidental or deliberate introduction of exotic non-indigenous viral pathogens is a high national priority. There is an urgent need to establish the new research center in Turkey to develop methods of early detection and diagnosis of these diseases and develop methods of control.

Culture of opium poppies in Turkey is strictly controlled by the national government. The introduction of new higher yielding poppy varieties is resulting in significant reductions in the areas under cultivation. It is estimated that the number of licensed poppy fields will decline from 12,000 to 8,000 hectares. Nearly 100,000 farm families and members directly or indirectly depend on the poppy crop at support price levels. As a result, there is an urgent need for farmers to establish alternative cropping practices and transition to other crops that will support farm families. The Center will provide certified plant material of perennial crops to replace poppy production.

The proposed Center will serve both Turkey and countries in the Eastern Mediterranean, Near East and Central Asia. The Ministry requests \$531,000 assistance from the U.S. government to support equipment purchases for the Center. The Turkish Ministry will provide \$59,000, or 10% of the estimated total cost of \$590,000. A four-year grant of \$600,000 will be requested from the European Commission to fund the training program at the Center. The first priority in the project is, however, to equip the facility.

Capacity Building and Sustainability

Background:

The principles of institutional development outlined in the policy paper developed by USAID in the 1980s are as important today as they were in the 80s and 90s. This paper addresses the issues defined in the USAID policy of institutional development and provides information about how the proposed research and training center meet the criteria for consideration of financial support from the Agency.

Consideration and Introduction of Organizational Alternatives.

This approach to development places emphasis on increasing resources or opportunities to acquire resources, typically by introducing or strengthening an implementing organization. Under this guiding principle “Missions should explicitly consider the implications that an institution’s proposed function may have for the form it will take and missions should ensure that the institutional structure is appropriate to the function. USAID should therefore see the task of institutional development not simply as institutional transfer, but rather as institutional invention/or adaptation”.

Proposed Center in Turkey

The proposed center in Turkey is based on an established institutional structure of the Ministry of Agriculture and Rural Affairs. The proposal provides for a new research center that will fundamentally change the role virology in the Institute of Plant Protection. In the past, research progress has been limited by the lack of well-equipped laboratories able to conduct both applied and basic research in plant virology. Strengthening this capacity will allow Turkey to play a leading role in plant pathology research among Central Asian countries.

Development of Institutional Learning Capacity

Institutions must have the ability to learn from and adapt to the environment in which they work. Such learning capacity enables organizations to adjust development programs to their environment. “ For example, technology developed by agricultural researchers must be reconciled with the local knowledge, capacities, and goals of farmers for whom such technology is intended, if technology is to be generally useful and widely accepted”.

Proposed Center in Turkey

The Ministry of Agricultural and Rural Affairs in Turkey recognizes the need to adapt to the changing environment of global competitiveness and the changing requirements for plant health certification. During the past several years the movement of insects and disease organisms across national and international borders has become a major concern. New laws and regulations have been implemented by many countries to prevent the introduction of harmful organisms. For example, the European Union has developed a list of strict regulatory requirements that must be met by all member states. Turkey must meet these requirements as a condition of membership. It is, therefore, essential that Turkey upgrade its plant health regulatory capability to meet these requirements. An important step in meeting these requirements includes upgrading the capacity of the country to conduct the needed research and develop improved methods of plant virus certification.

Transfer of Knowledge and Technology

Key institutions in the development process are those that generate, adapt, and disseminate knowledge and technology at international, national, and local levels. "Technology transfer is accomplished most effectively by those countries which have a scientific establishment capable of evaluating and adapting knowledge and technologies to local conditions. The establishment of local institutions that have the capacity to tap and contribute to the world knowledge supply must therefore be a high USAID priority".

Proposed Center in Turkey

The proposed research and training center will serve not only the needs of Turkey, but is designed to also meet the needs of other Central Asian countries. More than 50% of the population in several of these countries, including Uzbekistan, Tajikistan and Turkmenistan make their livelihood through agriculture. In these, and other countries in the region, agriculture accounts for 20 to 30 % of GDP. Although cotton has been the predominant crop produced in these countries, horticulture crops are also important. For example, Uzbekistan produces vegetable and fruit products. Turkmenistan produces vegetables and has an expanding potato industry. Turkmenistan also produces a variety of subtropical fruits including pomegranates, almonds, figs and olives.

Training at the Center for individuals from neighboring countries will include students, as well as those with a basic knowledge of plant biology and pathology. Another important aspect of training will involve those individuals who work as extension agents and are in direct contact with farmers. The overuse of pesticides and the resulting chemical pollution have created major problems for both the land and human health in several Central Asian countries. Training at the new center will enable those working with farmers to distinguish between damage caused by disease and other causes. This will provide a basis for reducing the use of pesticides and improving the environment.

Analysis and Improvement of Institutional Linkages/ Coordination

Many developmental efforts involve more than one organization in the planning and implementation process, and so an oft-encountered problem concerns the development mechanisms which link organizations into a unified, effective whole. “ Donor agencies and host country governments have experimented with a wide array of organizational structures and processes in seeking to achieve more coordinated development efforts”.

Proposed Center in Turkey

Coordination of activities at the center will be linked to a group of advisors from several European countries. Scientists from Italy, France, Germany, and the Netherlands will serve in an active role to guide the scientists and administrators of the center in developing the research priorities and the training program. All of the scientists who have volunteered for this activity have distinguished international reputations and have agreed to assist in the teaching program. It is anticipated that the training activities will include both short-term workshops as well as longer- term opportunities to pursue advanced academic degrees. Training activities will be initiated as soon as the existing laboratory facilities are adequately equipped.

Provision of Skills and Training

Successful institutional development depends upon persons trained in appropriate technical and managerial skills. “In both skill areas a broad range of people need to be considered in training, e.g., private artisans and business people as well as government technicians, paraprofessionals, and local administrators as well as ministry personnel”.

Proposed Center in Turkey

In addition to the training opportunities described in the previous section, training classes will be designed to educate farmers in the principles and application of improved methods of disease control. As mentioned previously, the overuse and misuse of pesticides in Central Asian countries, including Turkey, is a critical situation that can only be remedied through education of farmers and appropriate education of farm advisors.

Turkey has a core of trained professional that will serve as the nucleus staff at the new center. These individuals have received training in academic institutions in the U.S. and in Europe. These scientists are trained to conduct research utilizing the up-to-date tools to conduct the needed research. The only major obstacle to developing a modern and innovative program is the lack of equipment to conduct the research.

Capitalizing upon Local Capacities and Participation

The first step in a broadly based development strategy which fully mobilizes available human resources is to assure that people have the opportunity to acquire resources. (e.g., land water, technology, knowledge), as well as the incentives and opportunities to utilize the resources productively. The development experience of the last two decades also indicates clearly that the impact and sustainability of public sector investments can be significantly improved if local citizens assume a role in needs assessment, project design, and implementation”.

Proposed Center in Turkey

From the beginning, development of the concept for the center by the Ministry of Agriculture and Rural Affairs has involved the Institute of Plant Protection. Initial contacts with the U.S. demonstrated the commitment of both organizations in joint planning and implementation of the project. The Institute of Plant Protection offered to commit laboratory space in a building they currently occupy. They further offered to staff the facility with three professional plant virologists and a support personnel. At a meeting in April involving both organizations and a representative of the Foreign Agricultural Service of the USDA, a timetable for implementation of the project was discussed. The research timetable and course presentations are included in this report.

The Role of Institutions in the Development of Supporting Infrastructure

Many organizations require physical infrastructure in the form of buildings and equipment. “USAID will consider provision of capital assistance to meet these needs where resource availabilities permit, and where such assistance is integrated with sound planning to strengthen the organizational, managerial, and technical aspects of institutional capacity”

Proposed Center in Turkey

Institutional development has been part of the USAID mission for many years. Capacity building is an important part of this mission. As described in this paper, the basic infrastructure of physical facilities and human resources are available and will be provided by the Turkish government. A lack of funding to equip the facility is the only barrier that prevents establishing the new center.

BENEFITS TO THE U.S.

The U.S. and Turkey have maintained a long-term cooperative relationship in the field of plant biodiversity and conservation. Turkey is the native home to many of the most important food crop plants in the world. Plant collections of primitive and wild species have been made by the U.S. in Turkey for many years. These collections are part of the

National Germplasm repositories in the U.S. and have provided genetic material for improvement of many different crops. Maintaining a strong germplasm exchange program is in the vital interest of the U.S.

Development of a research and training center for plant virus control in Turkey will provide greater food security and sustainability in both Turkey and neighboring countries. The new center will create regional training opportunities for scientists, students, extension workers and farmers in these countries. Many of the countries have agricultural based economies and are encountering the same problems as those occurring in Turkey. A lack of healthy plant material of vegetatively propagated crops and the absence of plant health certification capability severely limits food production and results in the overuse of pesticides. It is the interest of the U.S. to improve agricultural output and sustainability in these countries.

BENEFITS TO TURKEY:

Turkey will have a state-of-the-art research and training facility that will serve both Turkey and other Central Asian countries. Agriculture in Turkey is in transition and increased emphasis is being placed on crop diversification. Research conducted at the center will provide a vital link in support of improving crops currently grown and in providing the scientific knowledge needed to produce disease resistant new crops. The new center will also provide Turkey with the infrastructure needed to meet the phytosanitary measures required for entry into the European Union.

Conclusion:

Regional Centers for research and training in plant virology were established several years ago in Italy and France to serve those countries and to meet regional needs in the development and implementation of technology for virus disease control. There is, however, no similar facility in Turkey or in any of the neighboring countries. The Turkish government has a suitable building and laboratories and has agreed to supply professional and support staff for the Center. A suitably equipped facility is now needed to make the Center concept a reality.