

JORDAN

CSD GUIDELINES FOR NATIONAL REPORTING TO CSD-16

Agriculture (government focal point)

Department of Agricultural Policies And International Directorate

Introduction

Agriculture is considered, in all countries, a basic pillar of economic and social development. During the past three decades, agriculture has also started to play a major role in the protection of the environment, including the protection of bio-diversity and ensuring an environmental balance that would secure sustainable use of resources and preserve them for future generations.

These principles have been used as a basis for agricultural strategies for many countries. Strategies no longer focus on the economic dimension of development alone, but emphasize the social and environmental dimensions as well. Developed countries have started allocating more resources to support the agricultural sector. Such support was about \$321 billion in the member countries of the Organization for Economic Cooperation and Development (OECD) in 2000, representing 32 percent of total value of agricultural output in these countries. The OECD countries continue this support regardless of the high cost entailed and associated problems at the level of trade, especially agricultural trade. The dispute among the developed countries on the issue of agricultural subsidies was a main impediment to WTO negotiations, and is considered clear evidence regarding the insistence of these countries to subsidize agriculture.

Jordan should not be an exception in its stand on the significance of agriculture and its role in development. To the contrary, due to its scarce resources, Jordan must give more attention to the development of agriculture in its economic, social and environmental aspects, and to deal with the agricultural sector on this multifaceted structure, which does not only consider economic returns, but the social and environmental benefits important for national security, environmental safety and public health.

The above considerations should not overshadow the need for economic efficiency in utilizing agricultural resources. Efforts must aim at building the agricultural economy on the basis of comparative advantage and competitiveness in price and quality, and at reducing subsidies and striking a balance in the use of natural resources for agricultural and non-agricultural uses.

Agriculture was not expected to remain the most important sector in the national economy, as it has been since the 1950s. The nature of subsequent socio-economic development, which led to the rapid development of other sectors of the economy, especially services and industry has resulted in a continued decline in the contribution of agriculture to the GDP. The contribution of Agriculture to the GDP, at current prices, has declined steadily from 14.4 percent in 1971, to 8.3 percent in 1975, to 7.1 percent in 1980, to 6 percent in 1995 and finally to 3 percent in 2006.

The decline has not been limited to its relative share in the GDP, but also in absolute value, which decreased, during the period 1991-2000, from about JD 223 million in 1991 to JD 178 million in 1995, and to JD **114.6** million in 2006.

The gravity of this decline is measured not only in economic terms. Though economic development is the base for any integrated rural development and is the main generator of work and income opportunities in rural areas, there are two other, equally important measures to consider. The first is a compound social and political one related to the role of agriculture in slowing immigration from rural to urban areas, and of the associated rise in poverty and unemployment around and within urban areas. The second is an environmental measure related to the rational use the natural resources—land, water, and natural vegetation—not just for direct economic benefits, but for the conservation of these resources and prevention of their degradation.

While the decline in absolute values of the agricultural output during this period can be partially attributed to the occurrence of dry seasons, as the ratio of low rainfall to good rainfall years was 5:1, it also coincided with the implementation of a structural adjustment program, which included liberalization of trade in agricultural commodities, abolishing agricultural subsidies, reducing customs duties on agricultural imports, and eliminating non-customs trade barriers.

In 2002, the government adopted a "National Strategy for Agricultural Development 2002- 2010". The strategy discusses the role of the agricultural sector in social and economic development, the present situation of the sector and future scenarios under a "status quo" scenario

and a "development" scenario to achieve a sustainable agricultural and rural development taking into consideration the social economic and environmental aspects of such development. The strategy presents profiles of proposed projects in the five agricultural sub sectors of rainfed agriculture, irrigated agriculture in the Jordan Valley, irrigated agriculture in the highlands, livestock and rangelands and marketing of agricultural produce.

Main Objectives of the Agricultural Development Strategy: -

Economic Objectives

1. Provide a suitable environment for the private sector to effectively participate in agricultural development.
2. Increase investment in the agricultural sector.
3. Enhance integration between plant and animal production.
4. Provide new job opportunities and work in the agricultural sector.
5. Increase incomes of farmers and workers in the supporting agricultural activities.
6. Ensure economic equity between agriculture and others sectors of the economy and within the agricultural sector itself.
7. Increase productivity and decrease production costs.
8. Improve the competitiveness of produce in quality and price in local and export markets.
9. Increase agricultural production and increase its contribution to the GDP.
10. Increase the degree of self-reliance in food, and improve the agricultural trade balance.
11. Attain integration between the agricultural sector and the other economic sectors, especially in the area of processing of agricultural products.
12. Link domestic supply with market demand.
13. Develop farmer organizations and other private-sector groups working in the agricultural sector.

Social Objectives

- 1- Limit migration from rural areas into urban areas.
- 2- Increase women participation in agricultural development.
- 3- Enhance the capabilities of farmers and agricultural workers, and develop their knowledge base and abilities to effectively participate in the socioeconomic development of the rural areas.

- 4- Improve health, educational, social services, and living standards for rural people.

Environmental Objectives

- 1- Conserve land, water and natural vegetation, and utilize them within their production capacity to ensure sustainable and long-term agricultural production.
- 2- Conserve Jordan's biodiversity and utilize it in supporting agricultural development.
- 3- Improve the technical and managerial capabilities in the agricultural sector to cope with probable climate and environmental changes, and absorb their consequences.

•Policies and programmes to achieve food security and sustainable agriculture.

In the years before 1989, food security in Jordan was not considered an issue of great urgency compared to other political, social and economic problems facing Jordan and the region. A Ministry of Supply was established in 1974, with the task of securing basic food commodities at reasonable prices to consumers. It controlled external food trade, imported strategic food items, food and feed prices and subsidized consumption and production of basic food commodities.

The WTO Committee on Agriculture has classified Jordan as a net food importing developing country. It depends heavily on imports to feed its population of about 5.5 million (2006). It will have to feed at least two more million people by the year 2010 if the present rate of population growth remains at its 2000 level of 2.8 percent per

The availability of food in Jordan depends on the amounts of food produced and imported, as well as, the amounts used for seeds, and amounts lost due to post harvest losses as provided by the FAO food balance sheets. For instance, the main cereal used in Jordan is wheat of which only 10 % is locally produced, so the availability of cereals is rather dependent on the amount imported. The second most important cereal in Jordan is rice, which is entirely imported. Most of the food consumed in Jordan especially cereals is imported.

In summary, Jordan has witnessed an increasing trend, in the last four decades, towards the average daily per capita energy and macronutrient supply. Review of trends in per capita supply of calories, protein and fat

in Arab countries over the last four decades revealed patterns similar to those of Jordan. Food availability in Jordan has been characterized, over the last three decades, by a considerable increase in cereals (primarily wheat) through imports, and a relative increase in milk, eggs, meat products, sugars, and vegetable oils. Removal of food subsidies, implementation of price liberalization policies, and the economic and social changes may have affected food expenditure and the purchasing power of the lower social segment of the population.

The World Food Programme (WFP) identified key risks to food security in Jordan's as follows:

- Lack of job opportunities and low income.
- Decline in economic indicators.
- Agricultural land degradation.
- Self-insufficiency in food products, especially cereals.
- Water scarcity, with Jordan ranking among the ten most water-deficit countries.

Ministry of Agriculture cooperation with Food and Agriculture Organization of the United Nations established "The Special Program for Food Security in Jordan –Phase 1"

A. Program Philosophy:

The Program has been established on the following assumptions:

- That viable opportunity for farmers to increase their food production does exist.
- That farmers' failure to utilize these opportunities is due to the presence of a range of constraints that prevent them from responding to needs and potentials

The belief that increasing productivity and improving the quality of life of rural families as well as creating an enabling environment for sustainable agricultural and rural development is possible by working with farmers and other stakeholders in identifying available opportunities and demonstrating better ways of increasing farm output and incomes and

in defining and resolving constraints whether they are technical, institutional, economical, social or political.

The Program considers that improving the productivity of small farmers is the preferred option for enhancing food security in the rural areas, given that the agricultural sector is the main source for employment, providing food and income and is the basis on which many non-agricultural activities rely, both pre- and post production.

B. OBJECTIVES OF THE SPFS

Improving the food security of rural families is the main objective of the Program. It is to be accomplished through achieving sustainable increase in productivity, reduction in year-to-year variability in production on the basis of stability of economic and environmental conditions, and the incentives emerging as a result of the increase in production, within the national and local economic framework.

The Program also aims at maximizing the degree of self-reliance of rural women and increasing net incomes through activating the role of rural families.

The programme consists of twenty-one projects proposed to be implemented during the period from 2004 to 2010 in the highland regions of Jordan, at a total cost of JD 37 million with the following core components: -

- Soil and water management at farm level.
- Development of field crops production.
- Diversification of production systems by introducing Horticultural.
- Development of small livestock projects at household level..
- Income generating activities for employment and poverty alleviation.
- Policies and programmes to enhance agriculture productivity and farmers incomes.
- Recent agrarian reform and other measures designed to secure equitable access to land resources by both genders.
- Community – based and indigenous approaches to sustainable food production.
- Prgrammes for environmentally – sound agriculture pest control.
- Actions to improve water management in agriculture (e.g. more efficient use, improved irrigation); measures to make more efficient and effective use of energy and other essential inputs for sustainable agricultural production.

- Measures to improve and develop infrastructure to enhance distribution to markets.
- **Completed bilateral, regional and multilateral agreements relating to liberalization of agricultural product markets, including under WTO,s doha round of trade negotiations.**

Major constraint and challenges: -

The Agricultural Sector started to witness declining growth rates during the late 1990s. This decline was attributed to the policy of trade liberalization adopted by the Government in 1994, and to the structural adjustment program of the agricultural sector (ASAL) in 2000. This trend increased with the implementation of measures related to Jordan's accession to the WTO, where measures undertaken for the protection of local production from external competition were abolished, except for a small percentage of custom duties on the import of certain commodities. Subsidies have been totally lifted and national agricultural products have had to compete with imported goods in the domestic and export markets. These developments coincided with a decline in the quality and quantity of water available for irrigation, which affected crop productivity and quality of produce and its competitiveness, in quality and price, in domestic and export markets. The fear is that these factors may deepen the declining trend in the agricultural sector output on the medium and long terms, and seriously affect the sustainability of social and economic development, unless measures are taken to address these problems.

The main challenges of trade liberalization to the agricultural sector in Jordan can be summarized as follows:

- Opening the Jordanian markets for agricultural imports without any non-customs restrictions.
- Giving the same treatment, in the local market, for imported and local products without any discriminatory measures.
- Limiting the protection measures given to local produce to reduced customs' duties on imports. Unfortunately, Jordan agreed to the reduction of customs duties, requested by the World Bank in the sector adjustment program (SAP) and entered the WTO negotiations with already reduced customs duties.

- Limiting the restricted local subsidy ceiling to 10 percent of the value of the agricultural output, on the condition that it is provided within certain forms. The non-restricted subsidy includes infrastructure, food subsidy programs, and agricultural development services including research, extension, training, information, studies and non-subsidized financing.
- Prohibiting exports subsidies except in very limited areas such as subsidizing internal transportation of exports.
- Enforcement of regulations to protect the domestic market from imports that do not comply with terms and technical rules of human, animal, and plant health, and enforcement of measures to protect the market from commercial fraud by being prepared technically, financially, and administratively to implement the agreements of TBT (Technical Barriers to Trade), and the Sanitary and Phytosanitary Measures (SPS).
- Protection of the local market from unfair competition reflected in harmful imports, subsidized imports, and dumping as well as false valuation of imported items to reduce customs duties. This protection is to be achieved by means of full readiness and good application of the agreements of Anti-Dumping Procedure (ADP), Compensation Fees (SCM), and Accurate Custom Valuation (ACV).

Concert actions taken and specific progress made in implementation:-

However, the two most important domestic changes were the implementation of a structural adjustment program, which started in 1989, and of an agricultural sector adjustment program, which started in 1994. These programs resulted in the liberalization of trade in agricultural commodities, opened the local market for imported agricultural commodities and eliminated most of agricultural subsidies.

Internationally, measures undertaken to liberalize the economy. Among such measures included accession to the WTO, signing of the Arab Free Trade Agreement and of the European-Jordanian Partnership Agreement. Although these agreements provide new opportunities to Jordan, they create challenges to local production that will require intensive efforts and substantial changes in the current policies, to overcome them.

Lessons learned: -

The free trade agreements among countries, whether multilateral or bi-lateral, will increase challenges to local products, while expanding the opportunity for export. The need to balance exports with imports is

important, and Jordan should not enter into new free trade agreements unless it is certain that these agreements provide real export opportunities in exchange for facilities provided for imports.

Recent trends and emerging issues: -

Jordan has embarked on liberalizing its domestic and foreign trade since 1989, as part of the ongoing structural adjustment program. In 1993, Jordan applied for accession to the GATT, expressing its intention to be integrated into the international economy, and its readiness for more trade liberalization.

Liberalization of trade in agricultural commodities in Jordan started in 1994 as part of the Agricultural Structural Adjustment Program (ASTAP), and the Agriculture Structural Adjustment Loan (ASAL) provided by the World Bank. Jordan subsequently took numerous measures to liberalize its domestic and international trade in agricultural commodities, which centered around removal of direct subsidies and non-customs protection, reducing support to irrigation water, removal of feed subsidy, and abolishing the monopoly of the Agricultural Marketing and Processing Company (AMPCO) for importing fresh vegetables and fruit short on the market.

Means for subsidizing bread were reviewed and largely reduced. In May 1995, the Government removed quantitative restrictions on all imports. Pre-approvals for imports were stopped and customs duties on imports were reduced to a maximum of 30 percent.

In 1996, the Government adopted a comprehensive Agricultural Policy Charter prepared by the MoA. The charter aimed at achieving an integrated social and economic development while mitigating the impact of trade liberalizing in agricultural commodities.

In 1998, Jordan joined the Great Arab Free Trade Zone, which stipulates phasing out customs duties by 10 percent annually and completely canceling them by 2005.

In April 2000, Jordan signed the Jordan-EU Association Agreement, which provides for the establishment of a free trade area. The agreement provides facilities and exemption in customs duties on Jordanian exports of agricultural products. This agreement was implemented in May 2002.

In May 2000, Jordan became a full member of the WTO. Thus, Jordan's local and foreign trade became subject to the provisions of the WTO agreements.

In 2001, Jordan signed the Free Trade Agreement (FTA) with the United States of America (USA). This agreement provides for a wide range of Jordanian agricultural products to enter the U.S market exempted from customs duties or at reduced rates.

In May 2004, Jordan signed the Free Trade Agreement with Singapore, which provides for the establishment of a free trade area. The agreement provides facilities and exemption in customs duties on Jordanian exports of agricultural products. This agreement was implemented in August 2005.

Jordan also signed several bi-lateral trade agreements to establish free trade zones with some Arab countries.

- **Measures taken to diversify agricultural production system, including development of new markets for value – added agricultural products.**

Government policies have, long considered marketing only as a supplementary service for production despite the fact that marketing starts before production, its creation of greater economic benefits, and its importance in determining economic returns. Most Government efforts have focused on developing production, which resulted in over-supply of some products, and wasting large quantities of horticultural produce because of imbalance between supply and demand.

The marketing infrastructure suffers from clear weaknesses, especially in the fruit and vegetables sectors. Fruit and vegetables wholesale markets do not represent real markets, with the exception of the one in Amman, which still lacks the essentials of supply and demand data for price formation. Infrastructure for post-harvest operations also suffers from shortages in the areas of pre-cooling, grading, packaging, refrigerated transport and storage, and processing of products.

Problems and Constrains

- Widening marketing margins expressed by large difference between producer and consumer prices, pointing to decreasing producer incomes and a rise in consumer prices in favor of middlemen.
- Increasing price risk of producers, and the weak system of price formation under conditions unfavorable to producers.
- Non market-oriented production and poor relation between marketing and production sectors, and weak mutual dependency among them.

- High post-harvest losses due to limited use of post-harvest technologies, and poor handling of produce along the marketing channels.
- Lack of suitable enabling environment to encourage PS initiatives due to government failure in involving the PS to develop the marketing sector, in maintaining free competition in the market, in providing marketing support services in research, extension, credit and information, and in ensuring the stability and soundness of policies and mechanisms for direct economic intervention in the market, including support, protection, and promotion of investment.
- Small size of the local market, subjecting the marketing of produce to the affects of regional markets, which adds to the challenges facing Jordanian produce.
- Weak competitiveness of Jordanian produce due to the small size of marketing entities and companies, which prevents them from benefiting from the economies of scale of large establishments.
- Poor quality of marketed products in terms of specifications, grading, packaging, and the difficulties faced in maintaining the quality of produce during handling of products.
- Inability of exports to expand in the traditional Gulf markets by targeting higher quality demanding and purchasing power segments, or to enter the European markets that are more demanding of high-value and quality produce.
- Failure of the marketing system to create “future markets” based on contracts between exporters or agricultural industries and producers. This has prevented the development of specialization in production, for processing or export, and kept export and processing of products as activities based on production surpluses.
- Increased competition facing Jordanian products in export markets, following the liberalization of trade in agricultural commodities.
- Increasing competition of imported commodities in local markets and increasing risks unfair competition, fraudulent trade practices, violations in the field of public health and animal and plant health. This is due to government institutions ill prepared in terms of plans, staff, and equipments to implement WTO regulations to prevent such risks.
- Inadequate monitoring and control system of specifications, especially the mandatory ones, the multiplicity of control agencies, and poor integration of food-testing and analysis laboratories.

One of Marketing Objectives is to: " Increase Exports to Traditional Markets and to Markets Demanding High-Value Produce".

Implementation Strategies:

- Establish a large national company to market horticultural produce.
- Produce competitive and high-value crops in demand in developed export markets, and meet these market requirements with regard to grades and packaging.
- Improve the quality and packaging of horticultural exports to the Gulf markets to reach high-income segments of these markets.
- Allocate a site at the Amman wholesale market for the sale of products intended for export without restricting the sale of such produce to the wholesale markets.
- Ensure farmers compliance to safe use requirements of pesticides in accordance with export market requirements.
- Provide exporters with information on export markets, train them to develop their skills in planning, and preparation and packaging of produce in accordance with export market requirements.
- Allow licensing of trucks as separate from trailers, and licensing trucks of 16.5 m length.
- Supervise conditions of refrigerated trucks to ensure maintaining required conditions during the transport of products.
- Abolish instructions giving priority of transporting fresh produce to Jordanian trucks, and leave it open for competition.
- Follow-up on coordination between the Royal Jordanian Airline and exporters to organize air transport, expand the refrigerated warehouse capacity, established by the Agricultural Marketing Corporation at Queen Alia Airport, and involve the fruit and vegetables producers and Exporters' Association in its management.

Government Policies:

Ineffective government policies to ensure free market competition in agricultural products were ineffective, either in providing relevant information to all market operators, monitoring and controlling marketing services and products specifications, and enacting legislation promoting free market operations (such as for the sale system at wholesale markets).

Significant weaknesses also exist in the provision of marketing support services, including market research, agricultural extension services, market information, and to a lesser extent, in the area of financing. There are few policies for direct economic market intervention; those that exist are characterized by their temporary nature and instability, such as in the case of protecting local production, or by the unsuitability of the mechanism used for their objectives, such as in the subsidies provided to sheep and goat breeders, which did not reach the target groups in several areas as planned.

Recent trends and emerging issues: -

The government of Jordan / Ministry of Agriculture signed an agreement with INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT to implement THE HORTICULTURAL EXPORTS PROMOTION AND TECHNOLOGY TRANSFER PROJECT, with total cost of (US \$ 5 million) this project will be finished end of 2007.

The objective of this project is to assist the Government of Jordan to improve horticultural export marketing by:

- A system of out grower farming between large and small / medium scale farmers in order to achieve “ critical mass” or “ bulk volumes” demanded by target markets and improve the income of participating farmers.
- The building of the technological capacity of farmers, especially the out growers, to improve crop husbandry practices and their produce quality to satisfy the requirements of target markets and reduce the rejection rates of exported consignment.
- The new national company to market horticultural produce will be established before the end of 2007 with capital of US\$ 10 million.

- **Improved national early warning systems for monitoring food supply and demand and household access to food; weather insurance schemes for farmers.**

Major constraint and challenges: -

The availability of food in Jordan depends on the amounts of food produced and imported, as well as, the amounts used for seeds, and amounts lost due to post harvest losses as provided by the FAO food balance sheets. For instance, the main cereal used in Jordan is wheat of which only 4% is locally produced, so the availability of cereals is rather dependent on the amount imported. The second most important cereal in Jordan is rice, which is entirely imported.

Jordan is a food deficit country. With an annual growth rate of 2.8%, the population of Jordan is expected to reach about 7.1 million by the year 2010 and will exert heavy pressure on the fragile natural resource base of the Kingdom. Total imports of food commodities still exceed exports by far so that Jordan is a deficit country with respect to food supply.

Major imports are those commodities which cannot be produced locally such as rice and sugar, and those commodities whose domestic

production falls short of satisfying the growing demand such as wheat, meat, dairy products, vegetable fats and oil.

In 1990, the deficit in the agricultural trade balance was around JD 342 million. Between 1990 and 1995, there was a slight decline, but the deficit remained around JD 300 million. In 1999, the agricultural trade deficit reached almost JD 350 million.

Jordan has surpluses in tomatoes, vegetables and fruit, which are mostly irrigated crops. High deficits concern cereals, pulses and animal products (meat and milk).

Projection of Food Balance By 2010
(Production and Requirements in 1,000 Metric Tons)

| Key Food Items | Per Capita Yearly Requirement (Kg) | Production (1999) | Requirement (2010) | Deficit/Surplus |
|------------------|------------------------------------|-------------------|--------------------|-----------------|
| Wheat | 140 | 56 | 994 | - 938 |
| Rice | 20 | 0 | 142 | -142 |
| Pulses | 10 | 5.1 | 71 | -66 |
| Tomatoes | 49 | 572 | 348 | +224 |
| Vegetables | 84 | 640 | 596 | +44 |
| Fruit | 60 | 503 | 426 | +77 |
| Bovine meat | 3.4 | 3.9 | 24 | -20.1 |
| Mutton/goat meat | 10 | 16.8 | 71 | -54.2 |
| Poultry | 31.2 | 110 | 222 | -112 |
| | 60 | 173 | 426 | -253 |

Recent trends and emerging issues: -

Ministry of Agriculture drafts a Law of the Agricultural Risks Fund. The government allocates an amount of 5 million Jordanian dinars (JD) by the public treasury in the 1 st year, and 3 million JD / year thereafter; as capital for it,

The law has been submitted to the Prime Ministry for approval.

The Fund aims to mitigate the impact of risks and damages that occur to the agricultural sector in the Kingdom and to conserve sustainable agricultural development through:

- 1- Promoting investments, especially those based on modern technologies, in the agricultural sector,

- 2- Establishing agricultural risk early warning stations,
- 3- Developing training programmes for risks assessment,
- 4- Benefiting from the services provided by the Ministry of Agriculture and other supporting institutions in assessing the volume of damages,
- 5- Providing guidance and advice to the farmers on advanced tools for risk prevention,
- 6- Obtaining loans and funding for investments that help achieve the Fund's objectives.

Ministry of Agriculture with cooperation FAO is looking to establish a unit dealing with warning systems for monitoring food supply and demand and household access to food.

In 2003 and 2004, the government has had to pay a total of 2.5 million Jordanian Dinars (JDs) as compensation to flood and frost- affected farmers;

During the period 1985 – 2005, the government has had to eliminate a total of 35 million JD as interests on loans obtained by farmers from the Agricultural Credit Corporation. The government also had to pay a total of 652thoused JD as compensation to farmers for damages incurred due to various reasons.

Desertification (government focal point(s))

- **Strategic planning frameworks for the protection and sustainable management of natural resources in deserts and areas affected by desertification, their integration into national development strategies and /or action plans.**

Introduction: -

Agriculture affects the conservation of natural resources and their sustainable use more than any other sector. Agricultural development is concerned with the conservation of natural resources and their rational use. If land and natural vegetation (forests and rangeland) are not utilized in a balanced and sustainable way, their properties and productive capabilities will deteriorate. Such degradation reduces their value as an economic resource, and results in an environmental imbalance that leads to non-sustainable development.

From Objectives of the Agricultural Development Strategy is **Define Land Uses According to Productive Capacity**, Giving Priority to the Development of Areas that have High Potential of Incorporating Water-Harvesting Measures as an Integral Component of Rangeland Development.

Implementation Strategies:

- Complete the soil survey and classification project on a more detailed scale for areas where annual rainfall exceeds 100 mm.
 - Diversify agricultural production systems through development of watersheds, using suitable water-harvesting techniques.
 - Establishment of an agriculture information unit at the MoA using modern information systems.
 - Train national staff in land-use planning and rangeland management.
 - Develop communities in the rangeland areas, and study the characteristics of pastoral communities, identifying their socio-economic features, their distribution and movement.
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- **Inter- ministerial/ institutional coordination mechanism for anti- desertification programmes.**
 - **Improved use of and local access to climate and weather information, forecasts, early warning and information networking to combat desertification.**
 - **Comprehensive database development on desertification, land degradation and human condition incorporating physical and socio- economic parameters.**
 - **Research and dissemination on ways of reducing water loss from soils, on increasing the water absorption capacities of soils and on water harvesting technologies in desertification affected areas.**
- Diversify agricultural production systems through development of watersheds, using suitable water-harvesting techniques.
- **Desertification and land degradation impact assessment.**

Drought (government focal point(s))

- **Strategic planning frameworks for the protection and sustainable management of ecosystems in drought – prone areas.**

The Government of Jordan has been paying attention to environmental issues since the 1960s. In addition to Government institutions, there are many non-governmental organizations that handle different aspects of the

environmental dimension of development. The Royal Society for the Conservation of Nature, established in 1966, was the first of such institutions. In addition, Jordan adopted a number of environmental strategies and plans, such as the National Strategy for the Environment in 1992, the National Work Plan in 1995, and Agenda 21 in 2000, as well as the ratification of nearly all international environmental protection agreements (such as the Framework Convention on Climate Change, the Kyoto Protocol on the Framework Convention on Climate Change, the Convention on Biological Diversity, and the Cartagena Protocol on Biosafety). Jordan has also drafted and issued a number of laws, instructions, regulations and standards in various environmental fields. Moreover, Jordan is party to the second bilateral free trade agreement with the United States of America, which includes articles dealing with environmental issues.

Available data on environmental indicators show that the percentage of wooded areas increased from 0.44% in 1990 to an estimated 0.84% in 2002 and that protected areas for biodiversity represents 0.44% of the total area of Jordan.

- **Policies and practices to arrest land degradation and to restore land and soil productivity.**

Agriculture affects the conservation of natural resources and their sustainable use more than any other sector. Agricultural development is concerned with the conservation of natural resources and their rational use. If land and natural vegetation (forests and rangeland) are not utilized in a balanced and sustainable way, their properties and productive capabilities will deteriorate. Such degradation reduces their value as an economic resource, and results in an environmental imbalance that leads to non-sustainable development.

Agriculture has an important environmental role to play in conserving bio-diversity, natural vegetation, soil, water, flora, and fauna. The significance of this role is related to its major contributions to reduce the threats of both desertification and environmental degradation, and of land, water resources and biodiversity. Natural resources must be protected to provide the requirements for sustainable agricultural production in the long-term.

- **National strategies and contingency arrangements for drought preparedness to deal with drought-related food and water deficiencies.**

Ministry of Agriculture cooperation with food and agricultural organization of the United Nations implemented a project “ **The drought of mitigation strategy in Jordan** “ this project was ending mid of 2007 work plane have been established and final recommendations and conclusions was discussed as flows: -

- 1- Establishing a high committee headed by the prime minister and membership of the following institutions:
Ministry of Agriculture (MOA) , Ministry of Environment (MOE)
Ministry of Interior (MOI), Ministry of planning and International cooperation (MOPIC), Ministry of Water and irrigation (MOW&I),
Royal Jordanian Geographical Center (RJGC), Meteorological Department, Research Centers, Governmental and non-governmental universities, NGO’s.
- 2- Formulation of the following sub-committees: _ technical, follow-up and evaluation of risk committees with the membership of the mentioned institutions to supervise what ever effects drought occurrence, establishing standards for declaring drought and writing reports for the high committee.
- 3- For the permanency of the work training programs on the drought issues is a must with an independent budget also training of the local community to make it involved within the decisions and handling what ever it takes for drought mitigation.
- 4- Importance of Signing MOU within the different institutions so as to clear duties and responsibilities of each party.
- 5- Training of trainers TOT so as to clear the concepts and the vision on drought issues.

According to Provisional Law No. (44) for 2002 “**Law of Agriculture**” this low include certain Article (65) concern arrangements for drought preparedness to deal with drought:-

Article (65)

In case the Kingdom, or any specific area thereof, is hit by drought, or the agricultural sector is hit by natural disasters, the Minister shall officially announce the fact. The Minister shall also, in coordination and cooperation with the competent parties, take the measures required to mitigate the negative impacts on the agricultural sector to the extent possible in accordance with the resolutions made by the Council of Ministers in this respect. The Minister shall also have the right to take the decisions that protect the consumers in such cases such as restriction of exportation of the agricultural products that are

affected thereby provided, in all cases, that the concerned international parties are notified of these measures.

- **Drought- relief schemes and their integration into national regional development planning.**

During the drought sessions the government

Upon a resolution by the Cabinet and due to the hard conditions prevailing in the agricultural sector, ACC exempted the farmers of 50% of the interests due on their loans in 1999. Thus, the Government provided for JD 3.1 million. ACC helped mitigate the drought conditions in the Kingdom in 1999. It provided seasonal loans for the livestock raisers in particular in order to enable them to buy feed. These loans totalled about JD 15 million in 1999 given to 6500 borrowers. Feed loans comprised about 90% of the total seasonal loans and 55% of the ACC total loans. Such rates are among the highest along past years due to the conditions and problems suffered by the livestock raisers especially the small scale ones.

- **Afforestation and reforestation programmes using drought- resistant, fast- growing species.**

The Government of Jordan has been paying attention to Afforestation and reforestation programmes issues since the 1940s..

Available data on Afforestation and reforestation show that the percentage of wooded areas increased from 0.44% in 1990 to an estimated 0.84% in 2002 and that protected areas for biodiversity represents 0.44% of the total area of Jordan.

Forests cover an area of 958,000 dunums, or about 1% of the country's total area. Of these, about 508,000 dunums are natural forests, 25% of which are privately owned. While the other 450,000 dunums are man-made forests.

- **Legislative measures and policy incentives to encourage forestry development in dry lands.**

- **Use of climate and weather information, forecasts, monitoring and early warning to mitigate the effects of drought.**

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- **Application of risk- mapping, remote- sensing, agro-methodological modeling, integrated multi-disciplinary crop- forecasting techniques, and computerized food supply/ demand analysis.**

Land (government focal point(s))

Problems and Constrains

- Continuous decline in the area of productive agricultural land, due to the encroachment of urban activities on agricultural lands, in the absence of a law that regulates land use for different purposes throughout the Kingdom. Out of a total 3.8 million du of agricultural land, about 1.7 million du are located within municipal boundaries, most of which are in danger of being converted to non-agricultural uses.
- An increase in random construction outside urban planning zones, due to unenforced legislation regulating building on agricultural land. New urban centers evolve as a result and gradually grow into small, unplanned villages that create additional pressures on agricultural land and the environment.
- The fragmentation of agricultural land, converting larger parcels into small production units unsuitable for mechanized agriculture, resulted in leaving uncultivated large areas of land every year. The legislation passed by the government, allowing partitioning of land ownership outside municipal boundaries into smaller areas, have also contributed to the fragmentation of these ownerships and forcing them out of production.
- The poor management of rangelands, the destruction of plant cover, weakening of productive capacities of rangelands, and the allocation of about 10 million du of rangelands known as claimed tribal lands to private owners, without proper plans for their development and management as a natural resource. This facilitated its entrance into the real-estate business and its use for non-agricultural purposes.

- The deterioration of the rangeland's natural vegetation due to overgrazing, the absence of a national comprehensive and integrated plan for rangeland development, and the continued urban encroachment on forest lands.
- The fluctuation of rainfall from one season to another, and its irregular seasonal distribution, emergence of clear indicators of decreasing rainfall and an increase in the occurrence of periodical drought cycles as noted during the last three decades.
- A continuous decline in the quantity of fresh water available for agriculture, and the continued deterioration of its quality due to the increased rate of its mixing with treated wastewater of high salinity, especially in the middle Ghors (Jordan Valley), which has already resulted in increasing soil salinity, at a time when there are no adequate water resources to be used for soil leaching.
- Groundwater depletion resulting from over-pumping, and the decline in the quality of ground water due to this over-pumping and the pollution caused by wastewater seepage in some areas.
- Continued encroachment on forestland through uncontrolled grazing, illegal tree cutting, and using forestlands for government and civil uses.
- Shortage in rehabilitation and social care programs for the agricultural labor, which leads to an exodus from the agricultural sector to other sectors and the replacement by expatriate labor. Permanent agricultural workers are not included in the Labor Law or the Social Security Law, contrary to the labor force in all other economic sectors.

- **Planning and development of land resources involving all land stakeholders, including indigenous and landless population; strengthened of land administration systems.**
- **Policies and laws to guarantee land and water use rights and legal security of tenure.**

The Agriculture Provisional Law No. (44) for 2002: Articles No. 27- 42
 The Land Use By-law No. (6) for 2007

- **Integrated assessments of socio- economic and environmental potentials of land resources.**
- **Application of techniques and methodological for assessing the potential adverse effects of climate change on wetland.**

- **Local community- based programmes to sustainable enhance the productivity of land and the efficient use of water resources.**

From the mid-seventies to the mid-eighties, the agricultural sector witnessed a remarkable development in irrigated agriculture. Irrigated areas and agricultural production increased in both the JV and the Highlands. A remarkable improvement was also observed in the productivity of agricultural resources due to the use of modern technologies and improved production methods in irrigated agriculture. Exports of fruit and vegetables, and live animals increased substantially as well. Production of poultry meat, table eggs and milk continued to increase. However, during the late eighties, the Jordan economy started to suffer from setbacks that prompted a structural adjustment program in 1989. The decelerating economic growth, combined with the negative impact of the second Gulf War, the introduction and implementation of trade liberalization policies and canceling of most of the subsidies previously provided for the agricultural sector, resulted in a progressive decline of the Sector's performance and its contribution to the GDP, as well as a loss of growth dynamics.

- **Development and use of land – use indicators and related monitoring system.**
- **Long – term land conservation and rehabilitation programmes to arrest land degradation.**
- **Promoting women's equal access to and full participation in land decision- making; gender mainstreaming of all land policies and strategies.**
- **Programmes for empowerment of people living in poverty and for their increased access to land and land tenure arrangements.**
- **Strengthened information systems and use of GIS for integrated planning and management of land resources.**
- **Strategic urban planning approaches aimed at managing urban growth, limiting urban sprawl and reducing the number of people living in poverty in urban and rural areas.**
- **National research on the local land resource system and on environmentally sound, site- specific, low- cost**

technologies, and provision of related extension services.

Jordan's consumption of materials that lead to ozone layer depletion dropped from 835 tons in 1990 to about 251 tons in 2001. Some studies were carried out on air quality in areas such as Aqaba, Al Hashimiyyah, and Mahes, showing that overall lead concentration (microgram/cubic meter of air) during the period May/2001 – May/2002 reached an average 0.23 compared to the 0.50 level permitted by international standards. For solid waste management and its dumpsites, there are 30 such sites, of which 10 are licensed. These sites use sanitary land filling and partial coverage as disposal methods.

- **Environmentally sound, effective and efficient use of soil fertility improvement practices and agricultural pest control.**

Rural development (government focal point(s))

- **Integrating Rural development strategies into poverty reduction strategies (PRSPs) or other economic/development strategies.**

According to the 2004 UNDP Human Development Report, Jordan has low human poverty, ranking seventh out of 95 countries ranked . This, and subsequent reports, indicate that poverty in Jordan is shallow , meaning that a large percentage of poor are close to the poverty line, and that any positive action targeting this group will result in reducing their poverty substantially.

In recent years , in particular in the 1990s , the Jordanian Government has openly acknowledged that the country suffers from a poverty problems and has increasingly sought to find ways to resolve it.

Achievements have also been made in reducing micro-nutrient deficiencies. For example the prevalence of iodine deficiency among school age children has been reduced from 38% in 1994 to 33% in 2000. Work has been done in changing legislation to enforce the fortification of salt with Iodine, the flour with iron and distribution of vitamin A supplements at schools.

Jordan government tried to support all activities and policies to ensure gender equality.

- **Causes of rural- urban migration, and policies to reverse trend.**
- **Main driving forces for economic growth and social development in rural areas (e.g. agriculture small and medium enterprise development, employment and other non- agricultural sector).**

Implementation Strategies:

- Provide incentives and soft loans for the implementation of small, income- generating agricultural projects at family level for supporting income of small farmers, using water harvesting techniques and family labor, and plant high-value cash crops, organic farming, and animal husbandry.
 - Promote processing of agricultural products such as freekeh (green dry wheat), and dairy products for increasing the added value of produce, and providing job opportunities for rural population.
 - Implement programs for training of rural population, especially graduate youth and rural women, in organic farming, methods of production drying and storage of medicinal and herbal plants and in home-made dairy products.
- **Improved access to basic services and infrastructure in rural areas (e.g. adequate shelter, education, employment opportunities, health, sanitation).**
 - **Access to land and property.**

The number of registered Agricultural land holdings in 1975 was 50,791, with an area of 3.9 million du, of which 17,425 holdings were irrigated, with a total area of 330 thousand du, and 33,366 of rain-fed holdings, with a total area of 3.57 million du. By 1997, the total number of holdings increased to 113,316 and the total cropped area decreased to 2.87 million du, of which, 2.3 million du of rain-fed land, and 570 thousand du of irrigated lands.

Between 1975 and 1997, the area of small-holdings (less than 5 du), increased by 19 percent, that of 5-10 du by 182 percent and that of 10-20 du by 101 percent. The three categories of holdings that suffered the most from fragmentation were those of 100-200 du which decreased by 42%,

those of 200-500 du, which decreased by 48 percent, and those of 500-1000 du, which decreased by 43 percent

- **Improved access for producers to local markets (for example, farm to market roads).**
- **Improved access to reliable and affordable energy services and to modern biomass technologies and fuel wood sources; commercialization of biomass operations in rural areas.**
- **Enhancement in sustainable tourism development.**
- **Environmental consequences of rural development efforts.**
- **Capacity building for small and medium- sized enterprises.**
- **Empowerment of local rural communities, especially those living in poverty and their organizations.**
- **Waste management system in the rural areas- waste prevention and minimization, reuse and recycling, and environmentally sound disposal facilities.**
- **Economic incentives to promote adaptation of lost cost technologies pertaining to the areas of rural development.**

Project Department and Rural Development

The Department of Project is currently implementing 46 projects with the cost of 233 million JD's.

These projects aims to :-

1. Improve food security and income levels of the targeted groups through management and conservation of soil and water and maintenance and rehabilitation of springs.

2. Halting deterioration of the agricultural resources to insure long term land and water resources productivity.
3. Improve living conditions for targeted group of women in project's area.
4. Protect dams against sedimentation and controlling soil erosion.
5. Increase productivity of lands (agricultural, range) for the benefit of small farmers and livestock owners.
6. Provide small livestock owners with pure and improved breeds of sheep and shami goats, and support sheep fattening projects.
7. Familiarize farmers with new agricultural practices based on mechanization techniques in production, and training of farmers on the optimal use of these technologies.
8. Increase food crops productivity through provision and use of two agricultural production inputs which are mechanization and fertilizers.
9. Improve quality of products and increasing their ability to compete locally and outside, and diversify and increase the quantity and value of exports by contributing in establishing a marketing company to achieve the objectives of the Export Development and Technology Transfer Project.
10. Encourage the private sector institutions to take a lead role in developing local and foreign marketing.
11. Re-build the production capability for range lands to realize their environmental and socio-economic contribution, and enhance environmental awareness in the use of range resources.
12. Protection of public health and environment by conducting research and experiments on the used pesticides under different environmental conditions, and qualify the supervising staff on pesticides and residue laboratories, as well as the staff of plant protection and the staff of agricultural extension and personnel handling pesticides from the private sector.

During the period (1995-2006) the implemented projects have achieved:-

- Soil conservation structures **287 thousand dunums.**
- Orchard plantation **228 thousand dunums.**
- Farm fencing by barbed wires or stone walls **238 thousand dunums.**
- Construction of cisterns to collect rain water **16 thousand cisterns** with a total capacity of **520 thousand cubic meter.**
- Construction of **46** earth dams & reservoirs.
- Construction of **252 kilometers** of agricultural roads.
- Construction of **22 thousand cubic meter** of wadi band protection (Gabions).
- Construction and maintenance of **125 km** of irrigation canals.

- Rehabilitation and maintenance of **78 springs**.
- **15 thousand beneficiaries** of agricultural and rural development loans with a total amount of **31 million JD's**.

Enclosing a table of all projects which are under implementation and it's main activities and it's locations.

Projects under implementation by PRDD

| No. | Project | Location | Project's Activities |
|-----|--|---------------------------------------|--|
| 1. | a- Agricultural Resources Management Project in Karak and Tafila (phase I). b- Agricultural Resources Management Project in Karak, Tafila and Ma'an (phase II). | Karak, Tafila Karak, Tafila, Ma'an | Agr. Resources management, soil conservation structures, agricultural development Agr. Resources management, soil conservation structures, agricultural development |
| 2. | Range Land Development and Rehabilitation. | Mafraq, Ma'an, Tafila, Karak | Agricultural development, water harvesting and participatory approach with the local communities |
| 3. | Support to Participatory Land Development. | The Kingdom | Agricultural resources management, soil conservation structures, agricultural development |
| 4. | Increasing Food Production Project. | The Kingdom | Selling farm machinery and extension on their use |
| 5. | Agricultural Resources Management in Yarmouk Basin Project. | North Governorates | Agr. Resources management, soil conservation structures, agricultural development |
| 6. | a- Income Diversification Project b- Income Diversification Project to Eliminate Poverty and Un-employment. | The Kingdom The Kingdom | Agricultural credit, farmers training Agricultural credit, farmers training |
| 7. | Horticulture Products Exports Promotion Project | The Kingdom | Export and Impacts and Agricultural Research |
| 8. | Management of Water Resources in Highlands and Jordan Valley Project. | Highlands, Jordan Valley | Awareness and extension programmes, cooperation with Ministry of Water and Irrigation |
| 9. | Household Gardening. | The Kingdom | Establishment of Household gardens, preparation of manuals to improve house hold garden's productivity |

Projects under implementation by PRDD

| No. | Project | Location | Project's Activities |
|-----|---|---|---|
| 10. | Poverty Alleviation through Development of Local Communities. | Irbid, Balqa, Karak, Ajloun, Jerash | Establishment and support to women cooperatives to implement income generating projects |
| 11. | Safe Use of Pesticides and Quality Control. | Amman, Balqa, Madaba | Improving agricultural products quality, promoting environmentally safe agricultural products |
| 12. | Zarqa River Basin Project (Complementary phase). | Zarqa, Mafraq, Jerash, Balqa | Land resources management, soil conservation measures, agricultural development |
| 13. | Kafrain Dam Basin Development Project. | Amman | Land resources management, soil conservation measures, agricultural development |
| 14. | Agricultural Resources Management Project in Al-Qurra. | Irbid, Al-Qurra | Land resources management, soil conservation measures, agricultural development |
| 15. | Wadi Al-Arab Basin Development Project. | Irbid, Wadi Al-Arab Basin | Land resources management, soil conservation measures, agricultural development |
| 16. | Improving Irrigation Canals to Reduce Water Loss. | Amman, Balqa, Irbid, Jerash, Ma'an, Ajloun, Karak, Tafila | Spring maintenance, irrigation canals lining |
| 17. | Wadi Hisban Basin Development Project. | Amman, Na'our | Land resources management, soil conservation structures, agricultural development |
| 18. | Agricultural Resources Management Project in Madaba Governorate. | Madaba | Land resources management, soil conservation structures, agricultural development |
| 19. | Agricultural Resources Development Project in the Northern Highlands in Tafila. | Northern villages in Tafila | Land resources management, soil conservation structures, agricultural development |
| 20. | Agricultural Resources Development Project in Shoubak. | Al-Shoubak | Land resources management, soil conservation structures, agricultural development |

Projects under implementation by PRDD

| No. | Project | Location | Project's Activities |
|-----|--|---|---|
| 21. | Wadi Shu'aib Basin Development Project. | Amman, Balqa | Land resources management, soil conservation structures, agricultural development |
| 22. | Agricultural Resources Management in the Lower Basin of King Talal Dam. | Jerash, Balqa | Land resources management, soil conservation structures, agricultural development |
| 23. | Capability Building Project. | Staff of Ministry of Agriculture | Improving the capability of the staff through training |
| 24. | Establishing of a National Company for Marketing Horticultural Products. | The Kingdom | A feasibility study for the project |
| 25. | Infra-structure Project for the Sector of Horticulture Exports. | Amman, Mafraq, Jordan valley, southern Ghores | Establishing station for packing, grading and export. 133000 JD for a feasibility study |
| 26. | Restructuring of the Systems of Providing Animal Health Services in Jordan. | Mafraq, Ma'an, Tafila, zarqa, Karak | Revision of animal health law, training and preparation of guides to extension veterinarians |
| 27. | Development of the Jordan Veterinary and Phytosanitary Inspection Services. | The Kingdom | Establishing Identification system, trace back live animals and improve monitoring and inspection services in border check points |
| 28. | Regional Project for Eradication of Cross-order Animal Diseases in Arabic region <ul style="list-style-type: none"> • Brucellosis Project • Foot and Mouth Disease (FMD) Eradication Project • Screw-Worm Fly Project | The Kingdom The Kingdom The Kingdom | Support of diagnostic and preventive activities, training, awareness programs, support current researches and studies Training awareness and extension, supply materials for researches and studies Feasibility study, support of control activities, training, awareness and extension control of the insect |

Projects under implementation by PRDD

| No. | Project | Location | Project's Activities |
|-----|--|----------------------------------|--|
| 29. | Continuous Agriculture. | Jerash | Promoting methods of environmental continuous agriculture |
| 30. | Desertification Monitoring in Al-Badia. | The Jordanian Badia | <ul style="list-style-type: none"> • Planting of range plants, • Meeting, training courses, workshops, socio-economic studies |
| 31. | Integrated Pest management in Near East Middle East. | The Kingdom | <ul style="list-style-type: none"> • Use of integrated pest management techniques • Establishment of farm field schools |
| 32. | Early Inspection of Bayoud Disease on Palm Tree and Developing of New Control Techniques. | | <ul style="list-style-type: none"> • Improve laboratories and ongoing research • Developing of control techniques for palm tree pests • Establishment of principle data |
| 33. | Control of Mediterranean Fruit Fly Using Sterile Male Technique. | Aqaba to Northern Shounah | <ul style="list-style-type: none"> • Control of Mediterranean fruit fly • Reduce the use of pesticides |
| 34. | Enhancement and Developing of Stone Fruit Production in Irbid Governorate. | Irbid | <ul style="list-style-type: none"> • Increase areas planted with stone fruits, • Extension and awareness to reduce quantities of pesticides used |
| 35. | Project of Precautionary Measures against Avian Influenza. | The Kingdom | Vet. Labs staff training, monitoring of epidemic animal diseases |
| 36. | Field Surveillance Agents Brucellosis. | Amman, Jerash & Karak | Tendering for buying equipment, preparing for experts visits |
| 37. | Small Ruminants Health – and Improved Livelihoods and Market Opportunities for Poor Farmers in the Near East and North Africa (NENA) Region. | Mafraq, Ajloun, Jerash and Irbid | Training courses, evaluation of vet. services, establishment of international network for diagnostic lab. connection |

Projects under implementation by PRDD

| No. | Project | Location | Project's Activities |
|-----|--|-----------------------|--|
| 38. | Biological Control of Red Palm Weevil. | Jordan Valley | Field survey of fungi and Nematodes in Jordan, development of insect traps, extension and awareness. Improving efficiency of domestic and foreign quarantine regulations |
| 39. | Integrated Crop Management. | Madaba, Jordan Valley | Control of grape phylloxera, development of post harvest handling to control red palm weevil. Field survey for squash viruses in Jordan Valley |
| 40. | Use of New Techniques in Forest Management. | The Kingdom | Purchasing fire fighters |
| 41. | Epidemic survey. | The Kingdom | Epidemic survey for common diseases between animals & humans |
| 42. | National Strategy Project to Eliminate Impact Drought Effect. | Badia and Highlands | |
| 43. | Study of the Pollution of Jordanian Environment as a Result of Pesticides Use. | The Kingdom | Analysis of residues of pesticides in agricultural products |
| 44. | Al-Eass Dairy Project. | Tafila | Signing the agreement, Building preparation, purchasing equipment, training |
| 45. | Developing of Dairy Marketing for Small Jordanian Producers. | Madaba | Establishing a small factory for white cheese processing, training courses |
| 46. | Integrated Management of Capnodis. | 7 Governorates | <ul style="list-style-type: none"> • Reduce the spread of Capnodis and other pests on stone fruits • Training courses, workshops, training specialized staff • Execution of field demonstrations, recording positive and negative results |

