



**FOLLOW-UP OF THE IMPLEMENTATION OF
THE WORLD FOOD SUMMIT PLAN OF ACTION**

NATIONAL REPORT

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Section I: Priority Food Security Issues and Progress Towards the World Food Summit Goal

AN OVERVIEW OF THE CHANGING TRENDS IN AGRICULTURE AND FOOD SECURITY IN I.R. IRAN

The role of agriculture in food security and development, and its various other socio-economic, political and environmental functions are well documented. In the Islamic Republic of Iran, agriculture is mainly practiced by the rural population, which constitutes 35 percent (23 million) of the total population. This promotes agriculture and rural development as the pillar of attempts for social equity, poverty alleviation, and food security. Iranian agriculture also accounts for significant portions in different macro economic indices such as GDP, employment, non-oil exports and foreign exchange generation, particularly in the years when other sectors of the economy face crises of various sorts.

Since the World Food Summit in 1996, great strides have been taken in Iran to reform the structure of agriculture and rural sector and promote sustainable food security. The results of these efforts, which are still on going, are reflected in different indicators of sector growth, food security and self-sufficiency.

The value added of agriculture sector grew by annually 3.4 percent to 54,521 billion rials in 2003 from 35,094 billion rials in 1991 at 1997 constant price. In the same period, the share of agriculture in the GDP slightly declined from 14.3 to 13.7 percent, which was due to fast growth rates also in other sectors of the economy.

The share of agriculture in capital investment, as a source for stimulating growth and development, in the last decade was annually about five percent.

Agricultural exports grew by annually 5.1 percent to \$1.48 billion in 2004 from \$776 million in 1991.

In this period the average share of agriculture in total employment was about 22 percent. Although this percentage was slightly less than that of the base year (24.6 percent), but the absolute number of people employed in agriculture had experienced a constant increase by annually 2.5 percent to 4.3 million in 2004 from 3.2 million in 1991.

The trends prevailing since the last reporting period for WFS follow up largely reflect the general trend over the last two decades in which the sector has experienced tremendous development at all levels and components. In the last 25 years, agriculture production increased by annually 2.4 million tons to 88 million tons in 2004, from just 25.6 million tons in 1977. The breakdown of these figures is, respectively, field crops to 65 million tons from 19.5 million tons, fruits to 14 million tons from 2.7 million tons, livestock products to 9.3 million tons from 3.3 million tons, and aquatics to 0.47 million tons from only 50,000 tons. These figures mean that the per capita agricultural production almost doubled to 1,300 kg in 2004 from 753 kg in 1977.

In the last decade, several successive droughts hit agriculture and rural life in different parts of Iran. Still the sector managed to even speed up the pace of growth and development, as a result of robust policies. The nation achieved self-sufficiency in wheat after several decades, while it imported about seven million tons of wheat just a few years ago. The total agricultural imports reduced by 100 percent and exports increased by 50 percent, which in aggregated led to a positive agricultural trade balance after thirty years. The following section provides a brief account of the major subsectors of agriculture in the period 1994-2004.

Field crops

In most field crops a significant growth trend prevailed, serving the cause of food security through domestic supply. The aggregate production of field crops, which was 43 million tons in 1994, exceeded 65 million tons in 2004, with an annual growth rate of 4.2 percent. This clearly attests to a serious attention to the issue of food security.

Perennials

In Iran horticulture is characterized by very promising potentials and capabilities, such as comparative advantage in many crops, high return to per cubic water used, contribution to betterment of environmental indicators, contribution to employment generation, and high yields per hectare.

The production of perennials increased by annually 3.48 percent to 14 million tons in 2004 from 10 million tons in 1994. The area under orchards increased to 2.36 million ha from 1.62 million ha in the same period, which represented an annual growth rate of 4.3 percent.

The main factors contributing to this outstanding growth included attraction of investors due to high profitability, timely supply of cheap or free saplings of good quality, supply of credit facilities and other incentives to the farmers, elasticity of the domestic market and prosperous export markets.

Livestock and poultry

Pursuing the policy of increasing the share of animal proteins in the nutrition pattern of the Iranians, the government took a wide range of measures to facilitate the growth in this subsector. As a result, the production of livestock products (red meat, milk, poultry and eggs) increased by annually 4.2 percent to 9.34 million tons in 2004 from 6.2 million tons in 1994. With 6.5 percent, poultry experienced the highest growth rate among livestock products.

Fishery and aquatics

The production of aquatics increased by annually three percent to 474,000 tons in 2004 from 350,000 tons in 1994. The bulk of this increase came from inland water, as fish culture increased to 125,000 tons in 2004 from 45,000 tons in 2004. Also the number of propagated fingerlings increased to 556 million from 275 million in the same period. At the present the per capita consumption of fish is only six kg, for the improvement of which there are specific policies ongoing.

Improvement of food quality and food security

There were also outstanding progresses achieved in the areas of:

- Stabilizing food supply and reducing volatility in production;
- Reduction of the costs of production as way to improve the purchase power at household level; and
- Improving the welfare, income and food security of the rural population; improvement of population dispersion patterns; checking rural-urban migration; and preventing the formation of slums around the cities.

As about food safety and food quality, there was a growing awareness and sensitivity among the various stakeholders, resulting in the incorporation of food safety and environmental issues in the majority of agricultural development and crop expansion programmes. The were specific policies and programmes adopted to reduce the use of pesticides and fertilizers, minimize the risks associated with animal drugs and heavy metals,

as well as other pollutants in agriculture.

To coordinate these efforts, a new institution, named ‘The High Council of Food Safety and Food Security’ was brought to the mandate of the government. Also various training and promotional packages were prepared to enhance the society’s nutritional awareness. A comprehensive plan was adopted to reduce losses at production and post-harvest phases. Another comprehensive plan was formulated for food safety. Also a wide range of measures were adopted to enhance sustainable agriculture and good farming practices.

Concerning physical access, the domestic per capita food production in the last 25 years increased to 1,300 kg from 753 kg

The self-sufficiency ratio has been estimated as under (2001):

Food self – sufficiency ratio in selected crops (%)

	1990	1996	2003	2004
Wheat	70.3	72.4	94.6	100
Rice	64.3	65.4	68.5	75
Red Meat	94.4	90.1	94.3	95
Poultry	100	98.7	99.9	99.9
Milk	89.3	99	98.2	98.5

Rural development

Significant rural development achievements have been made over the course of the three FYDP. The following examples may represent the magnitude of the rural development work done in the recent decades:

- 88,000 km of graveled rural roads and 38,000 km of asphalt rural roads built,
- Electricity brought to 44,327 villages,
- Drinking–water supply systems provided to 42,600 villages and full sanitary systems to 20,000 villages.

Section II: Follow up of the WFS Plan of Action

Commitments Three

We will pursue participatory and sustainable food, agriculture, fisheries, forestry and rural development policies and practices in high and low potential areas, which are essential to adequate and reliable food supplies at the household, national, regional and global levels, and combat pests, drought and desertification, considering the multifunctional character of agriculture.

Summary list of the most important programmes contributing to the WFS Plan of Action:

The growth and development of agriculture and food security in the Islamic Republic of Iran, in particular in the recent years, largely owes to a wide range of policies and programmes adopted under auspices of five-year national development plans, described in the next pages, and other frameworks. Examples of such key programmes are listed in the following table. Most of them are plan-based, ie. of them are plan-based, ie. initiated under a five year plan and re-adopted in the next plans. They usually have a large scale, often with national coverage, and may consist of several projects and sub-projects.

Programme	Year Initiated	Duration (years)	Status
Ten-Year Programme for Wheat Production Increase	2001	10	Ongoing
Ten-Year Programme for Maize Production Increase	2001	10	Ongoing
Ten-Year Programme for Kolza Production Increase	2001	10	Ongoing
Ten-Year Olive Development Programme	2001	10	Ongoing
The National Programme for Vegetable Oils Production Increase	2000	Plan-based	Ongoing
The Programme for Increasing Cane and Beet Sugar	2000	Plan-based	Ongoing
The National Programmes for Increasing Production and Yield of Rice	1994	Plan-based	Ongoing
The Programme for Increasing the Production of Onions, Potatoes and Vegetables	1994	Plan-based	Ongoing
The Programme for Identification of Appropriate Production Patterns	2001	Plan-based	Ongoing
The Programme for Propagation of Improved Varieties Saplings and Germplasm;	2000	Plan-based	Ongoing
The Programme for Rehabilitation of Traditional Orchards and Orchard Development	2001	Plan-based	Ongoing
The Programme for Conversion of Marginal and Slope Lands to Orchards	1994	Plan-based	Ongoing
The Programme for Development of Organic and Protected Horticulture	2001	Plan-based	Ongoing
The Programme for Plantation and Processing of Medicinal Plants and Mushrooms	1994	Plan-based	Ongoing

The Programme for Improvement of Horticultural Production, Harvest and Post-harvest Management	2000	Plan-based	Ongoing
The Programme for Mechanized Horticulture Development	2005	Plan-based	Ongoing
The Programme for Enhancement of Horticultural Production Standards and Quality	2005	Plan-based	Ongoing
The Programme for Strengthening and Development of the Plant Quarantine System	1967	Plan-based	Ongoing
The Programme for Major and Quarantine Pests Management	1994	Plan-based	Ongoing
The Programme for Strengthening and Development of Forecasting and Early Warning systems	1994	Plan-based	Ongoing
The Programme for Development and Expansion of Non-Chemical Approaches	2000	Plan-based	Ongoing
The Comprehensive Milk Programme	2005	Plan-based	Ongoing
The Programme for Development of Poultry, Honey Bees and Silkworm Production	1994	Plan-based	Ongoing
The Programme for Development of Red Meat and other Livestock Products	1994	Plan-based	Ongoing
The Programme for Animal Genetic Resources Protection and Breeding	1994	Plan-based	Ongoing
The Programme for Studies on Livestock Development Potentials and Feasibility	2000	Plan-based	Ongoing
The Programme for Feeding Improvement and Productivity Enhancement in Livestock Sub-sector	1994	Plan-based	Ongoing
The Comprehensive Studies for Fishery Development	1994	Plan-based	Ongoing
The Programme for Sustainable Development and Propagation of Fish, Shrimps and Other Aquatics	1995	Plan-based	Ongoing
Updating, equipping and management support of aquaculture farms	1999	Plan-based	Ongoing
Protection and improvement of the reserves	1994	Plan-based	Ongoing
Fish catch management and improvement of fishing methods	2000	Plan-based	Ongoing
Reforming the distribution system, promotion consumption behavior, and developing aquatic products processing	2005	Plan-based	Ongoing
The Strategic Programme for Control and Management of Quarantine Diseases and Quarantine Expansion	1973	Plan-based	Ongoing
The Programme for Epidemiological Diseases Monitoring and Study	1994	Plan-based	Ongoing
The Programme for Control and Eradication of Transmitted and Epidemic Animal Diseases	1994	Plan-based	Ongoing
The Programme for Development of Bio-safety and Hygienic Management in Livestock Subsector	2000	Plan-based	Ongoing
The Programme for Enforcement of Standards and Quality Control of Raw Animal Products, Inputs and Biological Materials	2000	Plan-based	Ongoing

The Programme for Development of Hygienic Management and Aquaculture and Control of Aquatic Diseases	2000	Plan-based	Ongoing
The Programme for Zoonotic Diseases Control and Management	1994	Plan-based	Ongoing
The Programme for Safety and Quality Assurance of Meat and other Raw animal and Aquatic Products	2000	Plan-based	Ongoing
The Programme for Destocking Livestock From Forests	1989	Plan-based	Ongoing
The Programme for Rangeland Improvement	1994	Plan-based	Ongoing
The Programme for Natural Resources Boundary Delineation	1967	Plan-based	Ongoing
The Programme for Watershed Management in Critical Areas	1994	Plan-based	Ongoing
The Programme for Protection and Development of Forests and Green Spaces	2000	Plan-based	Ongoing
The Programme for Combating Desertification and Wind Erosion	1994	Plan-based	Ongoing
The Programme for Fuel Supply to Rural and Nomadic Populations	2000	Plan-based	Ongoing
The Programme for Soil and water productivity Improvement	2000	Plan-based	Ongoing
The Programme for Improvement of Soil and Water Utilization Systems and Irrigation Water Structures Maintenance	2000	Plan-based	Ongoing
The Programme for Improvement of Irrigation Methods, Gravity and Pressurized	1994	Plan-based	Ongoing
The Programme for Development of Irrigation and Drainage Systems and Land Improvement	1994	Plan-based	Ongoing
The Programme for Supporting Small and Short Term Irrigation Water Resources Development	2005	Plan-based	Ongoing
The Comprehensive Programme for Development of Research in Strategic crops	2004	Plan-based	Ongoing
The Comprehensive Programme for Improvement and Development of Research in Livestock, Poultry, Fisheries and Veterinary	2004	Plan-based	Ongoing
Applied research in agricultural processing and complementary industries and mechanization	2004	Plan-based	Ongoing
Comprehensive Programme for Improvement and Development of Research in Pests, Diseases and Weeds	2004	Plan-based	Ongoing
The Programme for Agriculture Development Planning and Socio-economic Research	1994	Plan-based	Ongoing
The Programme for Plains Development Studies	2000	Plan-based	Ongoing
The Programme for Formulation of Technical Criteria and Measures in Agriculture Sector	2001	Plan-based	Ongoing
The Programme for Applied Research in Sustainable Development	2000	Plan-based	Ongoing

The policies, strategies and initiatives implemented, and their outcomes, are described below.

SUPPORT TO AGRICULTURE SECTOR

In the Islamic Republic of Iran agriculture is regarded as a primary sector. As such, the government places a high priority to support this sector and facilitate a stable level of income for the farmers. There are specific policies adopted to this end, including credit and insurance programmes, pricing policies, agricultural products exchange market, and facilitation of input supply:

Credit facilities

In the above period, the capital of the Bank of Agriculture was raised by about ten times to 3,000 billion rials from 370 billion rials. The government also provided this specialized bank with \$500 million foreign exchange. In addition, a bill was passed that required all the banks in Iran to allocate 25 percent of their credit facilities to agriculture development projects. These credits, besides other sources of funds and grants provided by the government increased the total amount of credits supplied to the farmer every year to 20,000 billion rials.

Agricultural products insurance

In cognizance of the role of insurance in reducing the risks to the farmers and assuring secure investment as a major element of food security, there was a particular attention given to promotion of this component over the last decade. As a result, the total area of farmland covered by insurance programmes, which was 1.5 million ha in 1991 (only 89,000 ha in 1985), reached 5.1 million ha in 2004. Also the number of livestock covered by insurance programmes increased to 6.2 million head from 0.2 million, these figures for poultry being, respectively, 287 million and 0.3 million.

In 2004 about 64 different products were covered by agricultural insurance fund, while this figure was only 10 in 1994. In the same period the number of farmers participating in insurance programmes increased to over one million from only 400,000. Also a Crop Revenue Insurance Programme is going to be launched in 2006, initially at pilot level.

Guaranteed prices

As a strong tool for supporting the farmers, this policy is pursued for various crops, with a strong will at all levels. The guaranteed price of wheat, as a main crop covered by this policy, increased by 245 percent over the above period, to 1700 rials in 2004 from 260 rials in 1994, as an attempt to improve the terms of trade of wheat with other agricultural and non agricultural products.

In 2004, about 11.3 million tons wheat (constituting over 80 percent of the national wheat production) was purchased under this policy. This figure was only 4 million tons in 1994.

Agricultural products exchange market

In this period a number of policies and programmes were adopted to improve agricultural products marketing structure. As a major step, the organization of agricultural products exchange was established as a non-governmental organization, which has experienced significant success within the short period of time since its establishment.

Inputs distribution

There has been significant increase in distribution of critical inputs. The improved seeds (of wheat, barley, maize, potatoes, rice, pulses, alfa alfa, clover and onions) supplied by the government system increased to 297,000 in tons in 2004 from 180,000 tons in 1996. In 2005, the government distribution of only wheat and barley, on which data is available, exceeded 292,000 tons. Chemical fertilizers distributed by the government system also increased to 3.7 million tons from 2.1 million tons in the same period. The pesticides use increased to 28,000 tons in 2003 from 16,000 tons in 1996. In 2004 the government initiated a programme to liberalized the pesticides market.

Natural resources

Of the total 165 million ha land area of the country, 136.4 million (83.2 percent) consists of renewable resources. 12.4 million ha (7.6 percent) of this is forests, 90 million ha (54.9 percent) rangelands, and 34 million ha (20.7 percent) deserts.

In the last decade, special attention was given to sustainable development and protection of the resource base. Some very important programmes were implemented to protect these resources and support their ecological and environmental services. In the rangeland sector, several plans and programmes were implemented to improve the rangeland quality, reduce soil erosion, increase sustainable production of forage, and develop groundwater recharge. These programmes covered an area of about 20 million ha in total.

Iran is located in an arid and semi arid region, with a desert area of about 34 million ha. Sand dunes and desertification has always threatened farmlands, villages and cities in many areas of the country. In the last decade desertification control programmes were prepared for an area of six million ha, the actual implementation exceeding 1.5 million ha to date. These actions have led to the improvement of the vegetative cover, land and water conservation, improvement of groundwater table, reversal of migration trend and protection of buildings in many marginal areas.

In the forests, priority was placed on checking the trend of clearance, rehabilitation of degraded forests and ecosystems, increasing the area under forests, increasing the sustainable wood production, retention and harvesting the rainfall in the forests, soil stabilization, and controlling floods. In this period more than 715,000 ha underwent afforestation and forest improvement programmes across the country. Also 911,000 animal units were destocked from the valuable Caspian forests in an attempt to improve the ecosystem and help the forests rejuvenate naturally.

The forest policy in IRI is dominated by the scarcity of forests due to over-exploitation and pressures of population; aridity; recognition of the beneficial effects of forests and trees in improving microclimate, supporting agricultural and animal production, protecting watersheds and mitigating desertification effects; and role of trees in mitigating wind and water erosion. Several policy directives have been issued to control activities inside the forests. Fuel is being supplied to the people living in forest areas. Felling of trees has been prohibited and grazing of undergrowths regulated. After the Earth Summit, clear felling was replaced by selection system and monoculture was replaced by species mixture. Biodiversity, participative forest management and award of forest operation contracts to community cooperatives in place of outside contractors are the other elements of the policy.

In order to resolve the issue of ownership and delineate the area under the custody of the government for conservation and protection purposes, boundary delineation works was carried out in about 68 million ha. Watershed management programmes were implemented in 12.3 million ha.

Soil and water

During 1994-2004 a range of plans and programmes were implemented in the areas of irrigation and drainage development, lining of traditional canals, land improvement, expansion of pressurized irrigation and other technologies directed toward increasing soil and irrigation water efficiency.

The agricultural policies of IRI aim at balancing the tangible objectives of food security, trade and rural development with the sustainable use of water, land and other natural resources. Reforms and liberalization are used to remove structural constraints and inefficiencies. Irrigation is an important component as almost 90 percent of the crop production in the country depends on irrigation. The main focus is therefore on irrigated agriculture.

The country has a long history and tradition in irrigated agriculture. In 1900, only about 0.3 million ha of cropland was irrigated. At the time of 1979 Islamic Revolution, irrigated area had increased to 3.5 million ha. By 2004, the irrigated area had expanded to about 7.8 million ha which makes Iran the 6th largest irrigation country in the world.

A total of 48 storage dams with a total capacity of 26.4 km³ have been completed while another 75 dams with a total capacity of 19.6 km³ are taken up for construction.

The exploitation of groundwater, which is mostly in the hands of the private sector but regulated by the government, was also greatly expanded. The newly constructed water development infrastructure (reservoirs, dams, intakes, primary canals), however, remained under-utilized due to non-completion of the lower order conveyance and distribution systems. The area served by completed modern main systems reached 1.3 million ha, about 18 % of the total irrigated area, by the end of 1999. The matching tertiary systems however covered only about 0.45 million ha by the end of 1999. Water use efficiency was improved, by lining of canals and by modernizing the traditional schemes, to 40 percent in 1999, up from 32 % in 1989.

Agricultural research, education and extension

In the last decade serious attention was placed on improvement of agricultural research, training and extension systems. At the present there are over 3,500 research programmes and projects being carried out on various aspects of agriculture development and sustainable management of the factors of production. The highest priority was given to the following fields of technology:

- Land and water use;
- Technologies enhancing agricultural value added (in particular processing and by-product industries);
- Biotechnology;
- Development of organic agriculture;
- Agricultural machinery and mechanization (designing, manufacturing and improvement);
- Technologies related to collection, identification, conservation, storage and utilization of plant and animal genetic resources; and
- Technologies related to desertification control, medicinal plants cultivation and production of hybrid seeds.

The country has developed a vast network of institutions related to agricultural research, extension, agricultural education and rural cooperatives. Their main eventual beneficiaries

are the farmers.

The Agricultural Research and Education Organization (AREO) sets policies and procedures for agricultural research within the over all context of government policies, sets research priorities, formulates national research programmes, directs its research institutes and centers in the implementation of research programmes and, in coordination with other stakeholders, publishes research findings, implements research programmes approved by the High Council of Research and Education, makes final selection, names and approves new varieties, runs a number of in-service training programmes for staff, and performs some more functions of similar nature.

The training programmes organized by AREO fall under four categories: (1) in-service training of staff, with reported 100,000 staff trained yearly, (2) higher education for rural youth (about 70%) and for staff (about 30%) with an enrolment of 2,000 students per year covering about 64 subjects, (3) three-year high school diploma programme and (4) Five to 15 days long training for staff and farmers.

The academic institutions of higher agricultural education, placed under the Ministry of Science, Research and Technology also carry research activities. At present (year 2003), there numerous universities located in various parts of the country, which offer higher education in agriculture, including B.Sc., M.Sc. and Ph.D. degrees. The total number of students is 38,366 with 18,788 female students. Previously, a small number of women used to enter the universities, mainly to study food science. However, now over 60 percent of the students are the female students enrolled in various agricultural sciences, including even agricultural machinery and agricultural extension.

The institutions of higher learning cover a variety of agricultural disciplines, such as agricultural management, agricultural development, rural development, agronomy, plant breeding, environment science, irrigation, plant protection, agricultural extension, agricultural education, horticulture, agricultural machinery, animal husbandry, veterinary science, pastures, soil science, food industry, agricultural economics, forestry, biotechnology, rural development, fisheries, paper and wood industry, dry region management, entomology, and watershed management.

Agricultural extension organization has a network, which provides direct advice to the farmers regarding improved agricultural technology and human resources development.

There were also massive formal and informal education programmes implemented across the country. As an indicative, annually about 35,000 persons were covered by informal education programmes in agriculture. The extension system was enhanced significantly both in terms of structure and coverage.

Agricultural mechanization

Aimed at improving the mechanization coefficient, substantial measures were adopted. The number of tractors distributed annually increased to 18,600 in 2004 from 4,000 in 1994.

In total, more than 90,000 tractors were distributed in the decade under review.

Plant protection

The main areas of activity of the government plant protection system in Iran include management of major pests, plant quarantine, and administration of pesticide affairs. Also programmes were implemented on biological control, seed treatment, weed control, etc. Over the last decade the area under control of general and crop-specific pests almost doubled to, respectively, 2.5 and 13 million ha. Also the area under biological control increased to

130,000 ha from 45,000 ha.

THE FOURTH FIVE-YEAR PLAN (FFYDP)

Thus, the Islamic Republic of Iran has put in place programmes and policies through five year development plans to put the agriculture sector on a sustainable growth path in accordance with the social, cultural and religious values of the country. Focus and approach through time have been becoming sharper to tackle the land and water resource problems, in respect of their enhancement, conservation and optimal utilization for sustainable, balanced and equitable growth in agricultural production.

In the year 2005 the nation entered into its Fourth Five Year National Plan for Economic, Social, Cultural and Political Development. Agriculture is a pillar of this overriding plan. From the other hand, the provisions of the plan are extremely important in shaping up the future directions of agriculture sector. An important characteristic of the new plan is that it incorporates specific programmes and projects for every individual goal set for major components and sub-sectors of agriculture.

Policies supporting the plan objectives in the country have been directed at socio-cultural and economic development. Social justice, poverty alleviation and reducing the income disparities in accordance with the religious and revolutionary codes of conduct have been the major focus. Reforms of monetary system and financial market and containing of inflation, encouraging investments and providing food security have remained expressed objectives of development planning and supporting policies. Generation of more gainful employment opportunities in the agriculture sector and also in secondary and tertiary sectors, specially in small scale factories, removal of economic monopolies, reduction of government role through public sector enterprises, privatization and co-operationalization have remained the over-riding national interest. Better utilization of land and water resources as well as conservation of agro-ecological diversity and through that increase in agricultural production for self-sufficiency and food security and enhancement of non-oil exports, specially the agricultural exports have been the major concerns. Education and human resource development also remained the focus of development efforts.

The following section briefly describes the outlines of goals, policies, pivotal activities, programmes and projects adopted in this plan for agriculture sector, focusing on the Commitment III of the Action Plan for WFS.

The Broad Policies for Agriculture Development in Iran

The FFYP sets the following broad policies for agriculture.

- Attain food security, emphasizing on domestic resources and self-sufficiency in basic crops;
- Pursue social equity, creation of equal opportunities and improvement of indicators related to health, food supply, and per capita income;
- Development of a comprehensive social security system to alleviate poverty and support the poor;
- Support and enrich the sense of cooperation and public participation;
- Conduct land use planning, based on the principles of social equity and regional balance; environmental protection and rehabilitation of natural resources; alleviation of depravities particularly in rural areas; development of employment opportunities

and reduction of unemployment.

- Prepare the grounds for enhancing competitiveness of agricultural products and services;
- Diversification of activities and enhance the human resources and application of advanced technologies;
- Undertake measures to enhance the productivity of the factors of production (land, water, capital, energy and manpower);
- Control inflation and improve the purchase power of the poor and vulnerable groups; reduce the gap between the upper and lower income percentiles of the population;
- Promote the income level and standards of living in the rural areas, focusing on the development of production infrastructure and diversification of economic activity, and expansion of complementary activities including processing and cottage industries and modern services; reforming agricultural pricing system; and
- Empowerment of the cooperatives and private sector as a main stimulators of economic growth and less government intervention;

Operational policies of agriculture and natural resources

These policies, which are in line with the broad policies stated above, include endeavors toward:

- Provision of food and promotion of health in the population;
- Increasing the producers income; fairer distribution of income; and cope with the rural poverty;
- Assuring viability, developing employment opportunities, and diversifying activities in rural areas;
- Conserving the resource base and the environment;
- Improving nutrition patterns in the society and increasing the consumption of animal proteins;
- Self-sufficiency in basic crops, focusing on domestic production;
- Enhancing the productivity of land, water, manpower and other factors of production;
- Reducing losses in production and post-harvest phases; developing post-harvest management and related industries;
- Reforming agricultural pricing system; and
- Developing infrastructures for production; and
- Attaining economic growth relying on knowledge and awareness, human capital, applied research and advanced technology.

Medium-term Goals of Agriculture sector

The FFYP anticipates the following medium-term goals for agriculture sector, almost all of which address the commitments of the Islamic Republic of Iran under the auspices of the Action Plan for WFS.

- Private investment facilitated in agriculture sector; the Farmers Income Stabilization Fund created; the capital of supporting funds increased;
- More productive units encouraged;
- Measures adopted to materialize the mandate requiring all the banks to allocate 25 percent of their credit facilities to water and agricultural projects;

- Specialized markets (such as agricultural products exchange) expanded;
- Advanced irrigation methods and technologies encouraged; water supply and productivity enhanced;
- Agricultural value added increased by annually 6.5 percent;
- Land and water improvement and irrigation and drainage projects implemented in two million ha;
- Insurance coverage expanded to at least 50 percent of all agricultural products;
- Agricultural processing and complementary industries developed; post-harvest losses reduced by at least 50 percent;
- The per capita production of proteins (livestock and aquatics) increased to 29 g;
- Land ownership titles issued;
- Orchards modernized; horticulture expanded particularly in slopes;
- Incentive created for involvement of agricultural specialist in private extension and training systems;
- Applied research expanded by two times compared to the performance of the base year;
- Higher attention placed on rural development;
- Export subsidies made more target-oriented; export taxes lifted on non-oil products; duties and other levies revised;
- Assistance provided to sustainable utilization of fishery resources; and
- Infrastructure and facilities developed for aquaculture.

Goals and pivotal activities by subsectors

In line with the above broad and operational sector policies, the FFYDP has envisaged specific goals and pivotal activities for each subsector and component. Many of the programmes listed in this section have been already ongoing under the third plan. Others are newly adopted to boost sustainable agriculture and rural development and food security. The following section summarizes these key goals and pivotal activities.

Field crops

Goals and major directions

- Production and quality of basic crops increased;
- Inputs and services supply systems restructured and streamlined in order to enhance efficiency and timeliness;
- Crop insurance expanded; subsidies target oriented; market improved;
- Appropriate information systems developed to serve the farmers and other producers;
- Production and distribution chain strengthened; crops exchange developed;
- Infrastructure developed for farmers income stability;
- Suitable production areas identified; appropriate production patterns prepared for different regions;
- Productivity enhanced; losses reduced; and
- Applied research, training and extension strengthened in field crops.

Pivotal activities and measures

- The National Programme for Vegetable Oils Supply;
- The Programme for Increasing Cane and Beet Sugar
- The National Programmes for Increasing Production and Yield of Irrigated and Rainfed Wheat, Rice and Maize;

- The Programme for Increasing the Production of Onions, Potatoes and Vegetables; and
- The Programme for Identification of Appropriate Production Patterns.

Horticulture

Goals and major directions

- Productivity enhanced and orchards modernized;
- Domestic and export infrastructure, including terminals, transportation fleet and storage facilities developed;
- Horticultural research, training and extension, mechanization and plant protection developed and coordinated; and
- Horticultural capabilities and potential fully utilized toward enhanced food security.

Pivotal activities and measures

- The Programme for Propagation of Improved Varieties Saplings and Germplasm;
- The Programme for Rehabilitation of Traditional Orchards and Orchard Development;
- The Programme for Conversion of Marginal and Slope Lands to Orchards;
- The Programme for Development of Organic and Protected Horticulture;
- The Programme for Plantation and Processing of Medicinal Plants and Mushrooms;
- The Programme for Improvement of Horticultural Production, Harvest and Post-harvest Management;
- The Programme for Mechanized Horticulture Development; and
- The Programme for Enhancement of Production Standards and Quality;

Plant Protection

Goals and major directions

- Non-chemical pest management approaches, particularly biological control developed and expanded;
- The quantity and quality of annual and perennial crops enhanced;
- National standards exerted for all pesticides; quality control measures strictly enforced in pesticides processing;
- Private sector participation enhanced in plant protection activities;
- Effectiveness of pesticides management and chemical application enhanced;
- Plant quarantine system strengthened across the country; and
- The natural resource base protected and utilized in a sustainable manner.

Pivotal activities and measures

- The Programme for Strengthening and Development of the Plant Quarantine System;
- The Programme for Major and Quarantine Pests Management, focusing on IPM approaches;
- The Programme for Strengthening and Development of Forecasting and Early Warning systems, with the participation of the non-governmental sector;
- The Programme for Development and Expansion of Non-Chemical Approaches, and focusing on biological control and optimization of chemicals and fertilizers use.
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Livestock

Goals and major directions

- The quality and standards of livestock products enhanced and export developed;
- The productivity and efficiency enhanced, losses reduced, and production systems improved;
- The related processing industries and services strengthened and developed, with the participation of the non-governmental sector;
- Supports target oriented; livestock products consumption pattern and awareness promoted;
- Animal genetic resources protected and effectively utilized;

Pivotal activities and measures

- The Comprehensive Milk Programme;
- The Programme for Development of Poultry, Honey Bees and Silkworm Production;
- The Programme for Development of Red Meat and other Livestock Products;
- The Programme for Animal Genetic Resources Protection and Breeding;
- The Programme for Studies on Livestock Development Potentials and Feasibility; and
- The Programme for Feeding Improvement and Productivity Enhancement in Livestock Sub-sector.

Fisheries

Goals and major directions

- Productivity, sustainability and quality enhanced in aquaculture;
- The market structure enhanced; and
- The reserves protected and improved;

Pivotal activities and measures

- The Comprehensive Studies for Fishery Development;
- The Programme for Sustainable Development and Propagation of Fish, Shrimps and Other Aquatics;
- Updating, equipping and management support of aquaculture farms;
- Protection and improvement of the reserves;
- Fish catch management and improvement of fishing methods;
- Reforming the distribution system, promotion consumption behavior, and developing aquatic products processing.

The Veterinary system

Goals and major directions

- Productivity and food security enhanced through reducing animal and animal products losses;
- National and international veterinary standards, rules and regulations enhanced in the country;
- Animal quarantine network strengthened and quarantine measures enforced;
- Pollution epidemiological sources of animal and zoonotic diseases identified; and
- The quality and safety of raw animal and aquatic products improved in accordance with national and international standards.

Pivotal activities and measures

- The Programme for Strategic Control and Management of Quarantine Diseases and Quarantine Expansion;
- The Programme for Epidemiological Diseases Monitoring and Study;
- The Programme for Control and Eradication of Transmitted and Epidemic Animal Diseases;
- The Programme for Development of Bio-safety and Hygienic Management;
- The Programme for Enforcement of Standards and Quality Control of raw animal and aquatic products, inputs and biological materials;
- The Programme for Development of Hygienic Management and Aquaculture and Control of Aquatic Diseases;
- The Programme for Zoonotic Diseases Control and Management; and
- The Programme for Safety and Quality Assurance of Meat and other raw animal and aquatic products.

Natural resources and good practices

Goals and major directions

- Aquatic resources protected and rehabilitated;
- Natural resources boundaries delineated for more strict surveillance;
- The plan for natural resources conservation, rehabilitation and development formulated and implemented;
- At least 70 percent of livestock destocked from forests, and 50 percent from rangelands;
- Watershed management programmes carried out in 20 percent of the area under dams and 10 percent of other watersheds;
- Wood farming expanded by 100,000 ha and man-made forests by 500,000 ha;
- At least 1.5 million ha of critical sites of desertification controlled;
- Flood control work carried out in different watersheds;
- Monitoring and surveillance system extend to all forests in the country;
- Fuel supply system coverage extended to rural people, nomads and forest settlers, as a means to reduce the demand to fuelwood;
- The participation of rural councils and local organizations in forest protection activities; and
- Ecological considerations strictly observed in forest utilization;
- Linking natural resources development programmes to the livelihoods of the local people and traditional rights of resources use.
- Higher use of composts;
- Integrated Pest Management Expanded; and
- Afforestation, green space and wood production expanded.

Pivotal activities and measures

- The Programme for destocked Livestock From Forests;
- The Programme for Rangeland Improvement;
- The Programme for Natural Resources Boundary Delineation;
- The Programme for Watershed Management in Critical Areas;
- The Programme for Protection and Development of Forests and Green Spaces;
- The Programme for Combating Desertification and Wind Erosion; and

- The Programme for Fuel Supply to Rural and Nomadic Populations.

Land Affairs

Goals and major directions

- Ownerships identified and stabilized both in the government and private lands;
- Suitable lands for farming and horticulture expansion identified and distributed to investors;
- The existing agricultural lands protected from conversion to other uses;

Soil and water

Goals and major directions

- Irrigation efficiency increased;
- Irrigation water use management enhanced; and
- Land management improved in agriculture.

Pivotal activities and measures

- The Programme for Soil and water productivity Improvement;
- The Programme for Improvement of Soil and Water Utilization Systems and Irrigation Water Structures Maintenance;
- The Programme for Improvement of Irrigation Methods, Gravity and Pressurized;
- The Programme for Development of Irrigation and Drainage Systems and Land Improvement; and
- The Programme for Supporting Small and Short Term Irrigation Water Resources Development.

The Extension system

Goals and major directions

- Individual and organizational capacities of farmers associations enhanced;
- Sustainable farming systems developed;
- Agricultural resources and production factors productivity enhanced;

Pivotal activities and measures

- Non-formal education of farmers and producers in basic crops and fruits;
- Development of private extension system;
- Promotion of NGOs and vocational associations in agriculture sector; and
- Promotion of rural women's participation in economic and social activities.

Agricultural research

Goals and major directions

- Research on food security developed and improved, with a priority given to livestock and aquatics;
- Applied research developed and expanded on land and water, seed and sapling improvement, breeding, forest and rangeland management, plant pests and diseases, product quality, productivity enhancement, genetic reserves, and bio-diversity;

Pivotal activities and measures

- The Comprehensive Programme for Development of Research in Strategic crops;
- The Comprehensive Programme for Improvement and Development of Research in Livestock, Poultry, Fisheries and Veterinary;
- Applied research in agricultural processing and complementary industries and

mechanization;

- Comprehensive Programme for Improvement and Development of Research in Pests, Diseases and Weeds;
- Establishment, development and completion of agricultural and natural resources research centers and parks;
- The Programme for Agriculture Development Planning and Socio-economic Research;
- The Programme for Plains Development Studies;
- The Programme for Formulation of Technical Criteria and Measures in Agriculture Sector; and
- The Programme for Applied Research in Sustainable Development.

TEN-YEAR PROGRAMMES

Besides the activities stated in the above sections, there a number of key crop-specific longer-term programmes ongoing or under formulation for strategic agricultural products in Iran, which are seen as extremely influential in increasing production and attaining food security through domestic production, as has been the case with wheat. The outlines of the key ten-year programmes for some basic products are provided asunder.

Ten-Year Programme for Wheat Production Increase (2001-2010)

Goals

- Wheat production increased to 17.3 million tons by 2010;
- Irr. wheat yield increase to ??? from 4.8 tons/ha; and
- Rfd wheat yield increase to 1.167 tons from 0.83 kg/ha.

Ten-Year Programme for Maize Production Increase (2001-2010)

Goals

- Area increase to 415,000 ha in 2010 from 235,000 ha in 2003; and
- Per hectare yield increase to 8.5 tons from 6.5 tons.

Ten-Year Programme for Kolza Production Increase (2001-2010)

Goals

- Area increase 715,000 ha from 125,000 ha in 2003 to
- Per hectare yield increase to 2.1 tons from 1.57 tons in the base year

Ten-Year Olive Development Programme (2001-2010)

Food Security and Related Indicators

No	Indicator Name	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
1	Average per person dietary energy supply	3076	3052	3373	3306	3136	3519	3596	3520	3822	3631	3322	3535	3659	3599	
2	Cereal supply per person	150.2	153.4	165.2	153.7	146	170.8	170.6	172	189.1	166.7	138.7	175.8	166	155	
	• Wheat	34.9	34.4	40	42.6	30.9	40.9	42.3	33.8	37.3	38.8	36.9	29.3	42.2	40	
	• Rice															
3	Animal protein supply per person	16.9	18.5	18.7	20.1	19.8	20.01	20.08	20.3	20.6	20.8	20.9	21	21	23	
4	Food self – sufficiency ratio															
	• Wheat	70.3	74	78.1	82.1	82.4	75.7	72.4	62.8	77.1	58.5	59	58.3	81.4	94.6	
	• Rice	64.3	75.3	64.2	57.6	76.7	58.8	65.4	70.3	73.8	59.9	52.3	64.9	64.2	68.5	
	• Red Meat	94.4	79.3	90.7	86.2	89.7	86.9	90.1	92.2	90.4	99.9	97.8	96.1	96.8	94.3	
	• Poultry	100	100	94.9	92	99.7	99.9	98.7	99	100	98.1	98.3	101.2	100.5	99.9	
	• Milk	89.3	83.4	91.1	90.5	96.1	96.4	99	97.9	99	99.8	99.1	100	100.1	98.2	
5	Food production index	80.1	79.5	88.4	91.5	91.1	91.6	95.1	93.5	105.8	102.1	100.2	97.7	108.7	106.7	
6	Index of variability in food production	%0.27														
7	Consumer price index (in Urban Areas)						100	124.4	152.1	166	178.4	212.7	245.9			
8	Economic and Trade	0.83														
	TOT(total)	3	0.770	0.658	0.881	0.628	0.641	0.530	0.238	0.325	0.476	0.406	0.415	0.437	0.371	
	TOT(Agriculture)	0.91	1.041	1.164	0.858	0.832	1.132	0.592	0.627	0.663	0.672	0.686	0.833	0.937	1.384	
	Share of agriculture exports (value) of total non oil exports	-	31.22	31.46	32.40	26.69	28.51	32.29	17.87	27.22	23.65	18.55	20.79	21.37	21.99	19.72
9	Proportion of area protected to maintain biological diversity	7.1														

Metadata

No	Measurement unit	Definition	Statistical Methodology	Source
1	Kcal / Person / Day	Food available for human consumption, expressed in kilocalories (Kcal) per person per day. At the country level, it is calculated as the food remaining for human use after the deduction of all non – food consumption (exports, industrial use and wastage).		Food Balance Sheet of Iran
2	Kgr / Year	Total Cereal supply consists of total cereal production & imports		Food Balance Sheet of Iran
3	gr / Year	Protein per capita per day in grams, estimated from food balance sheets		Food Balance Sheet of Iran
4	%	Ratio of domestic production to domestic consumption. An indicator of the need for food imports		Food Balance Sheet of Iran
5	%	The PIN is based on the sum of price – weighted quantities, after deducting similarly weighted quantities of seed and feed. All indices at country, regional and world level are calculated by the Laspeyres formula. Production quantities of each commodity are weighted by 1999-2001 average international commodity prices and summed for each year. In order to obtain the index, the aggregate for a given year is divided by the average aggregate of the base period 1999-2001		FAO
6	%	Magnitude of fluctuations in a production curve		Central bank of Islamic Republic of Iran
7	%	Change in cost to the average consumer of acquiring a fixed basket of goods and services		Central bank of Islamic Republic of Iran
8	%			
9	%	The ration of ToT per weight unit of exported goods to that of imported		Calculated based on trade data from the Ministry of Commerce