

Ministry of Agriculture and Agrarian Reform

**NAPC**

National Agricultural Policy Center

# **Mid-Term Review of The Syrian Agricultural Strategy**

**Damascus, October 2006**

With the support of  
Project GCP/SYR/006/ITA





# Abbreviations

ABC	Agricultural Cooperative Bank
CAS	Comparative Advantages Study
CCU	Commission for Combating Unemployment
DAA	Department of Agricultural Affairs
DAE	Department of Agricultural Extension
DAH	Department of Animal Health
DPP	Department of Plant Protection
DT	Department of Training
GAFTA	Great Arab Free Trade Agricultural
GEFV	General Establishment of Fruits and Vegetables
GEMAAP Production	General Establishment for Marketing the Animal and Agricultural
GESM	General Establishment of Seed Multiplication
GTZ	German Agency for Technical Cooperation
IB	Industrial Bank
IPPC	International plant Protection Conservation
ISMF	Institutional and Sectoral Modernization Facility
MAAR	Ministry of Agricultural and Agrarian land
MoT	Ministry of Transportation
NAPC	National Agricultural Policy Center
NAPC, 2005a	Status of Food and Agriculture in Syria
SAS	Syria Agricultural Strategy
SAT	Syria Agricultural Trade
TD	Trade Division



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# Executive Summary

The Ministry of Agriculture has set an orientation for Agricultural Development Strategy covering the period of 2001-2010 which included: 1) Evaluating the current situation of agriculture. 2) Identifying the objectives, programs and policies of the agricultural development strategy. 3) Setting the executive programs and providing all requirements in order to increase the agricultural production, improve the agricultural sector, and enhance its role to convoy the general economic changes.

In order to articulate what have been achieved of the objectives and programs that included in the agricultural strategy orientations, and to highlight the weaknesses and strengths that associated the agricultural sector performance during the period of 2001-2004, it has been decided to make a mid-term review of the strategy to conclude the most important indicators in which can propose the required modifications for the imminent sub-period of the strategy orientations (2006-2010).

The Mid-Term Review has encompassed a view to what have been achieved based on two main sections as follows.

**Section I:** chapter one has included an assessment of the economy context and a general overview of the Syrian economy. Second chapter of the section one in the MTR has included what SAS has comprised of (general objectives, policies, programs, and actions). As for chapter tree of the first section has included an assessment to what have been achieved of those objectives and actions.

**Section II:** has included SAS review during the period 2006-2010 and this has been done by reorganizing the planned programs and actions that have not perfectly executed during the period 2001-2005. In addition, propose new actions that correspond with the changes resulted after setting the SAS document.

Economic context assessment demonstrated that there was an increase in the economic and social achievements, as well as, an increase in investments in both private and public sector. Moreover, the GDP has realized a tangible increase during the previous period and it reached an average 3.5% increase during 2000-2004. In addition, the agricultural GDP has grown by 14.9% during the same period, and the per-capita of GDP has increased by 4% despite the population increase, which has reached 17.9 million in 2004, including 4.3 million as labor force. Agricultural sector contributes in employing 26% of total labor force.

Late nineties have witnessed an accelerated reform process of whole policies towards indicative planning; in addition to enhance the private sector's role in the economic activities, which have associated with significant modification in banking legislations, interest rates, opening private banks, adjustment of taxation system and others.

The agricultural sector has got some improvements such as increasing production input and requirements, expanding the cultivable areas, which has formed in average 29.1% of aggregate cultivated areas during 2001-2004. While production input has testified tangible changes wherefrom the pesticides have declined due to applying the biological control on some field crops and fruitful trees ( in particular, citrus,

olive, and cotton); in addition to; the innovation of some strategic high yield crops' varieties, and introducing some new varieties of vegetables.

Crops' areas has developed disparately among crops, namely, cotton's areas has decreased (corresponding to government's policy in maintaining the sustainability of water resources), sugar beet areas have been limited to maintain production quantity to full fit the sugar plans' capacity that are operating in the country, taking into account the utilize of single embryo seeds. On the other side, the industrial crops' areas (cumin, black cumin, and anise) have increased and the same case for legumes. Despite the decrease in some vegetables' areas such as tomato, the production quantity has increased during 2001-2004 by 32.8% in comparison with 1997-2000. Also, potato's area has decreased by 3% during two previous periods. As for fruitful trees, they realized an increasing amounted 5.9% in area and 1.7% in production term. Beside that, rainfed olive's area has realized the highest increase (10%) comparing with other fruitful trees areas.

Moreover, there were changes in livestock's numbers, which wobbled between increase ( as the case of sheep heads 3.5%) and decrease ( as in the aggregate heads' number of goats and cows that accounted 5.5% and 2.3% respectively) during the two periods 1997-2000 and 2001-2004.

In fact, the agricultural sector has played a significant role in providing raw materials to the local industry by providing wheat, either for milling, or for other traditional food industries such as biscuits and pasta, providing sugar beet for sugar plans and other of agricultural products of both plant and animal production.

On the other hand, the government contributes in enhancing agricultural production through providing its inputs in which the Agricultural Cooperative Bank provides loans and distributes locally produced or imported fertilizers. Beside the ACB, also the private sector is contributing in distributing the fertilizers. In addition, the government is responsible for direct intervention in the case of epidemics outbreaks, and it is responsible for importing pesticide for public agency (e.g. GESM) So far, private sector is allowed to import and distribute all pesticides, fungicides, and herbicides; and the MAAR controls the quality. Also the General Establishment for Seed Multiplication (GESM) is responsible for providing and distributing all the required amount of cotton, potatoes and sugar beet seeds. Moreover, GESM distributes also part of wheat, barley, lentils and chickpeas seeds; furthermore tobacco seeds are provided by the General Establishment of Tobacco.

The Agricultural Extension Directorate of MAAR provides extension services through a countrywide network of extension units. Those supportive services are needed to improve the performance of agricultural sector by developing the agricultural researches, to increase the productivity of plant and animal production unite, to provide agricultural extension to the farmers, and to improve the infrastructures in the rural areas through : the construction of agricultural roads, establishment of market centers to marketing agricultural strategic products, and through other development projects that aim to improve the social and economic status of rural households.

### **The Syrian Agricultural Development Strategy Orientations**

The Syrian Agricultural Development Strategy has been set to cover the period of (2001-2010) in light of economic changes in order to embody both a vision of what the sector should look like in the future and a road map showing how to fulfill that vision. The SAS has a group of policies that designed to pursuit the socio-economic development goals. In order to realize the development's objectives, the SAS has included three levels of interventions that impact the agricultural sector performance. Those interventions are definition the objectives and policies required for executing those policies, the programs in which those productive objectives can be achieved, and finally the actions that comprise the procedures that define exactly the required steps to achieve the scheduled programs.

The components of the original SAS have been reorganized into MTR in order to realize high consistency among policies, programs, and related actions. Consequently, the six general programs that were included in the SAS (natural resources, plant production, animal production, supportive services, inputs, and agricultural policies) have been classified into five programs, which include sixteen sub-programs to ease monitor, follow up, and assessment in the MTR document.

### **Achievements of the Syrian Agricultural Strategy**

The first step towards the assessment of the SAS is to carry out a qualitative and quantitative analysis of the available data. Therefore, the reference year for quantitative data analysis was 2004 or after in case of data availability. As for qualitative data analysis, the available data from related resources have been adopted.

In general, we can summarize the main find outs of the assessment as follows:

- The executed plant production has exceeded the planned objectives, but the animal production had not realized the planned growth rates such as red meats, fish, and milk
- It have been started in implementing the marketing policies, but it did not reach the desirable level ( it must be focused on producing suitable surplus for export, develop the marketing systems such as wholesale markets and information systems, improve post harvesting and processing activities).
- Although the international trade measurements are developing, attention should be paid more on products quality to meet the international quality standards
- Institutional enhancement needs to be more developed (stressing especially to establish new training centers and supply them with the requirements)
- Objectives related to natural resources and rural development still facing some difficulties to be achieved (such as adopting the suitable crops agricultural rotations, accelerating the conversion into modern irrigation techniques, increase the efficiency of public irrigation networks, expanding the reforestation and plantation coverage in Al-Badia, and establishment of wholesale markets in the rural areas).

### **The Revision of the SAS Orientations (2006-2010)**

The Syrian economy has witnessed a remarkable development in all economic and social domains in general. In addition, some modifications have been made to the policies that relate to the agricultural production such as pricing policy, giving the private sector all opportunities to actively play its role in production and development process by allowing it to import some inputs, and actively contribute in the marketing process. In addition to the State orientations to conserve the natural resources, especially water resources, where the state has focused on increasing water use efficiency through converting into modern irrigation with retaining on its central role in resources allocation.

In light of shifting towards social market economy and the conclusion of trade agreements that imply the need for reconsidering the current agricultural policies, creating an economic environment suitable for those changes, and producing agricultural commodities that can meet the external markets in order to improve and motivate development process; in addition, to improve the living standards of rural people.

According to what have been listed above, the Mid-Term Review of the Agricultural Development Strategy 2001-2005 is considered as one of the instruments adopted to analyze and assess the performance of the agricultural sector, highlight the weakness and strengths of the agricultural strategy, conclude some insights based to modify the planned targets and programs of strategy 2006-2010 in order to realize the required development depending on a scientific programmed base of the agricultural

sector during the coming period. These modifications in the planned targets in addition to the new actions are presented in new matrix, which included all actions that already stated in the SAS were confirmed during the mentioned period.

## **Conclusions and Recommendations**

According to analyzing findings, it was noticeable that there was an increasing in plant production's growth rate and livestock's as well, but with less degree for the later one despite the bad effects of drought that preceded that period, which reflected a relative improvement in living standards in rural areas through the improvement of economic return of production unit. In addition, increasing agricultural labor productivity due to modern techniques transforming such as crop's productivity increasing, applying the integrated management of pesticide control, and focusing on biological control applications to some fruitful trees and field crops that have effective impact on product quality and decreasing the costs.

The government has conveyed the new changes in internal and external economic context through regulations and continuing pursuit toward enhancing sustainable use of natural resources concept, especially water in order to provide a suitable economic investment environment for inputs. Whereat the substantial changes that happened in the international economic context evoked the government to modify its policies and production plans so it gave space to private sector to engage in the production process by giving it the opportunity in providing some production inputs and contributing in the marketing process. Although the facilities presented to that sector, its performance still need to be improved by promoting the agricultural product's quality, increase its competitiveness in the international markets, improve the processing of the agricultural commodities to increase the value added, and expand crops that enjoy comparative advantage.

Agricultural extension plays a significant role in developing production process through its role in transforming the information and new technologies to the producers. However, it was noticeable that extension was unable to execute all its activities due to inputs unavailability in suitable quantity and quality although the enough number of extension units that displayed in the whole country. On the other side, it was noticeable that there was a decrease in agricultural credit volume, especially for long, medium, and short-term credit and devoting most of them to short term credit, which recall increase medium and long term credit proportion.

According to what have been mentioned, it is possible to suggest the following recommendations that can enable agricultural sector to go further ahead towards realizing economic development and increasing its contribution at several domains that are as follows:

### Natural resources and rural development policies

- Focusing on setting policies that insure sustainable use of natural resources ( land, water, forest and others)
- Increasing the converting rate into modern irrigation methods
- Introducing alternative crops especially that enjoy comparative advantage in the agricultural rotations and maintain enough wheat production to meet the local needs
- Expanding the reclaimed land area of mountainous and hilly land and providing the required machineries and plant it with varieties that enjoy comparative advantage
- Improving irrigation efficiency at public irrigation network and speedup of maintain and rehabilitate of old network
- Improving infrastructure for rural sector (develop the agricultural roads, establishing whole sale markets in rural areas, promote infrastructure that relate to socio-economic as schools and health centers)

### Marketing and international trade policies

- The improvement of the value added by means of enhancing the agro-processing activities and adopting the international standards.
- Providing the accurate policies and mechanisms that insure adopting the international measurements for exported agricultural products, and to insure its entrance strongly to the international markets.
- Produce commodities that enjoy of comparative advantage at low costs to increase its competitiveness in the international markets
- Establish a developed information system, which insure handling information to the producers, exporters, processors, and decision makers about global market prices, its requirements and its demand schedule.

### Institutional policies

- Giving priority to the agricultural sector
- Modifying economic establishment's role into research one
- Defining the role of other bodies that related to the agricultural sector
- Increasing the budget allowance to training and extension ( such as providing transportation means, training requirement , new technology)
- Training the extension staff and providing requirements needed to transform new techniques and guarantee the adoption of the accurate technical practices at field level.

# Introduction

After many decades of central planning, the Syrian economy has witnessed a gradual evolution in strategic thinking towards liberalization, reliance on market forces, and integration into the international economic system. The policy of gradual reforms initiated in the second half of the 80s with a shift from central to indicative planning, has substantially accelerated in late 90s, at domestic level – e.g. promoting private investment, modernizing the public administration, modernizing and privatizing the banking system and simplifying marketing – as well as at international level – e.g. reforming the exchange rate and currency use regulations, concluding an Association Agreement with the EU, applying for the accession to the WTO, and actively negotiating and implementing regional and bilateral trade agreements.

Those changes have affected all economic sectors, including the agricultural sector, where the general objective of public interventions has been shifting from self-sufficiency to food security and sustainable self-reliance, to be pursued through the enhancement of agricultural productivity and sustainability. In response to these economic changes, the Party leadership issued the Decision no. 85 of 30 December 2000, which endorsed the orientations included in the MAAR's memorandum on the Syrian Agricultural Development Strategy (SAS). The Strategy was set to achieve the following goals:

1. assess the current agriculture situation,
2. define the objective, strategies and policies of agricultural development,
3. design a plan on the development of agricultural sector up to 2010, and
4. define the executive programs and required inputs.

The SAS programs were defined with reference to three sub-periods: 2001-2003, 2004-2005, and 2006-2010. This was done to ensure the required gradualism to such a fundamental reform. Moreover, for the sake of monitoring and assessing its achievements, the SAS planned a Mid-Term Review to be carried out in year 2005. The contents of the Mid-Term Review of the Syrian Agricultural Strategy (MTR) were laid down by the fifth session of the Consultative Board of the National Agricultural Policy Center (NAPC) on its session of 12 January 2005. According to it, the MTR objective is twofold, namely:

1. assess its achievements up to the end of 2003, and
2. review the strategies up to the 2010.

This is what this document is about. The assessment has been carried out analyzing the historical evolution of the agriculture sector, evaluating the sectoral objectives and policies pursued since 2000 and critically assessing the sector opportunities and constraints. On the other hand, the revision has been based on the analysis of the determinants of the divergences between the original actions/programs of the SAS and its actual achievements, as resulted from the assessment.

The MTR has been carried out according to the following principles:

1. market-orientation: policies that impact the agricultural sector must be consistent with the general economic approach – i.e. increasingly market-oriented – that characterizes the interventions in the overall economy;

2. **gradualism:** the speed and depth of the reform process should be gradual, in order to ensure it will be successful and safe - i.e. to avoid major adverse economic shocks;
3. **feasibility:** acknowledging the complexity and difficulty of designing and implementing an agricultural strategy, special attention must be devoted to its feasibility, namely:
  - a. **social acceptability:** it should be the result of a collaborative effort among different institutions and groups in the society considering their special priorities and urgent needs, and
  - b. **affordability:** the financial constraints must be taken into account, setting priorities across programs and actions;
4. **accountability:** a very important concern to be addressed in implementing a strategy is to set a suitable monitoring system that can ensure the transparency of its application and provide room for proposing any required correction and change.

From the methodological point of view, the objectives of the MTR has been pursued through a continue dialogue with key policy makers, especially those who had the opportunity to participate in designing the SAS and implementing it, and the involvement of all stakeholders. The attempt is to build a revision exercise, which will be as much participative as possible.

The analyses carried out in the MTR are both quantitative and qualitative, depending on the availability of data. The reference year for quantitative analysis is 2003 or a more recent year, depending on the availability of data. For qualitative analysis the attempt is to have as much updated information as possible from the relevant sources.

This document is made up by two parts, reflecting the two main components of the MTR exercise, namely the assessment of the current situation and the revision of the SAS. The assessment part is structured as follows. Chapter 1 depicts the current situation of the Syrian economic context, with emphasis on the agricultural sector. Chapter 2 reports a short description of the Syrian Agriculture Strategy (objectives, policies and programs). Chapter 3 is devoted to highlights the actual achievement up to year 2004 after the SAS implementation, comparing the original goals and targets. Chapter four includes an assessment the difference between the actual and planned targets highlighting the reasons of divergences in order to set up the required actions for necessary adjustments.

The revision part provides the main elements for the revision of the SAS, focusing on the constraints, the resources, the priorities, and the programs as they emerged from the analyses carried out in preceding chapters.

## **Part I - Assessment**

# 1. The Current Situation

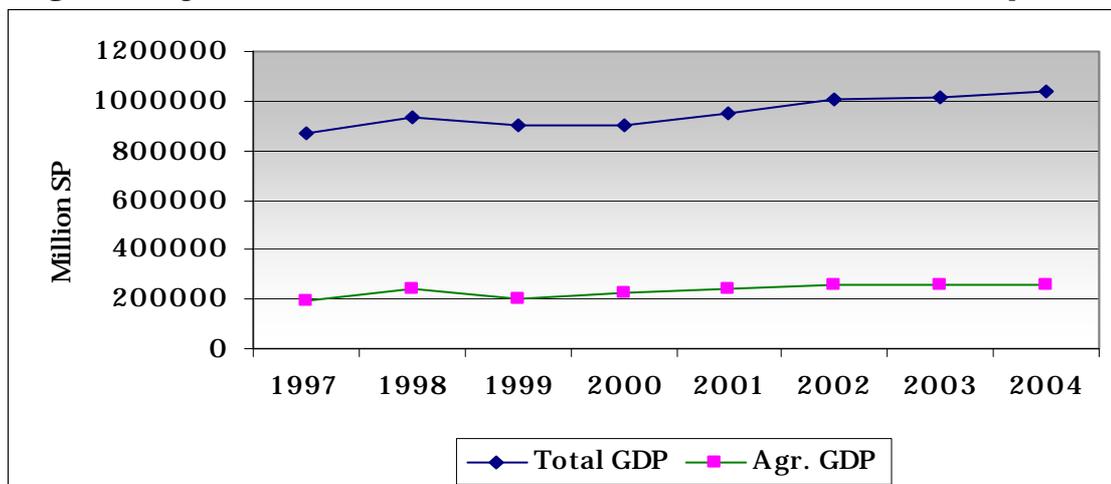
## 1.1. The macroeconomic context

### 1.1.1. A sketch of the Syrian economy

Syria has witnessed a long period of political stability and some socio-economic achievements since the early of the 70s. However, the new globalization drive, regional competition for access to global markets, and internal socio-economic challenges prompted a debate within the government to initiate drastic economic reforms. Since then, the Syrian economy fared quite well.

The most updated data show that in 2004 the Syrian GDP at market prices was SP 1,038,421 million (CBS, 2005) . The real GDP growth rate increased gradually with little fluctuations to reach 3.5% at the end of 2004. Figure 1.1 shows that the agriculture has significantly contributed to the economic growth of Syria. Agricultural GDP at constant prices grew by almost 14.9% from 2000 to 2004. Such that, the share of agriculture on GDP increased from 24.3% to 26.3%.

**Figure 1.1** Agricultural GDP and total GDP 1997-2004 (million SP, 2000 constant prices)



Source: CBS, 2005

In per capita terms, during the period 2000-2004, the average annual per capita GDP has increased gradually from SP 55,389 in year 2000 to SP 57,754 in year 2004, performing an average increase of 4% per annum. This is an important achievement considering the population growth rate over the same period. In fact, Syrian population grew from 16.3 million people in year 2000 to 17.9 million in 2004<sup>1</sup>, that is at an average growth rate of 2.4% per annum (CBS, 2005). Population projections for 2010-2020 indicate that the growth rate of total population would be high, in the range of 2.2-2.7%, so that total population will rise by about two thirds by 2020 ( SOFA, 2005).

In 2004, total labor force amounted at 4.3 million (CBS, 2005), mostly employed in the service sector (29.9%) and in the building and construction sector (19.5%). In the

<sup>1</sup> Half of which is still rural, though the urbanization rate is increasing.

same year, the unemployment rate was estimated at 10.8% of the total labor force. The country is indeed facing a tremendous challenge to generate employment opportunities for the presently unemployed workers as well as for the increasing labor force. This will result in an increasing pressure on existing resources and, according to population growth projections, preventing further increase of unemployment requires the creation of 200,000 additional employment opportunities per year (SOFA, 2005). According to the preliminary results of the CBS 2005 survey on Syrian household income and consumption, the average wages in 2004 ranged between SP 5,000 and SP 9,000 per month, with a significant share of unskilled labor force (40% of total) that earns less than SP 5,000 per month (CBS, 2005).

In 2004, total consumption was SP 828,726 million (at 2000 constant prices), about 17.6% of which was public consumption (CBS, 2005). Gross domestic investment for the same year was SP 239,911 million, 53.3% of which was public investment. In 2004, Syria budget experienced a deficit of SP 30,216 million, whereas in 2003 there was a surplus of SP 9,410 million.

Trade volume increased by 23% over the period 1993-95 to 2000-03<sup>2</sup>. Most of the increase (16.9%) took place over the triennium 2000-2002 when trade volume expanded from SP 403.7 billion to SP 551.7 billion. A significant improvement of the trade balance accompanied the growth of the trade volumes from a negative balance into steadily positive values, reaching about SP 80.2 billion in 2002 (more than tripling the one of year 2001)<sup>3</sup>. The trade revenue is highly dependent on oil exports, which account for 60-70% of total export earnings, while agricultural exports account for 16.8% of total (SAT, 2004).

### *1.1.2. Macroeconomic policies*

Syria has started a policy reform process since mid 80s to promote a comprehensive development process aimed at a deeper participation of the national economy and substituting indicative planning for central planning. The reform was initiated by the sixth Five Year Plan 1986-1990. In this context, the private sector was allowed to engage in activities previously under State control and a number of incentives were provided to promote private investments. The pace of reform accelerated at the end of the 90s, when there was a renewed effort to increase the capacity of the economy to integrate in the international economic system (cf. the investment Law no. 10 of 1991). As a result, policy changes have been introduced at macro and agricultural sector levels as well.

As part of the policy reform process, the government issued several norms to stimulate economic growth through the mobilization of savings and the promotion of investment (cf. Decree no. 39 of 3/12/2003, Decree no. 4 of 28/5/2003, and Decree no. 43 of 5/1/2004). In particular, interest rates on current accounts and saving deposits were reduced gradually from 9% to 5.5% in 2003. Banks were authorized to provide loans for high technology projects in the areas of information and computer technology, biotechnology, medicine, and environment at an interest rate below 5.1%, subject to the approval of the Central Bank of Syria. But, probably the most important reform was the lift of restrictions on establishment of private banks and the opening of a stock market in the country. By 2004, four private banks started their activities, operating under the same set of norms regulating the public banks.

One of the main objectives of the policy reform was the modernization of the taxation system on income, wealth, and capital. A program of tax reform was devised to ensure more equity and to increase tax revenues (Decree No 265 of 2001). The system of tax exemptions was modified in line with the economic and social objectives

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<sup>2</sup> From now on, if 2004 data are not reported means that these data are not available.

<sup>3</sup> This was reflected in standardized trade balances that increased from an average -14.4% in 1993-95 to 9.8% in the period 2000-2002 and an exceptional 14.5% in year 2002 (SAT, 2004).

of the country. Farm income tax and agricultural cooperatives continue to be exempted from income taxes.

## 1.2. Syrian Agriculture<sup>4</sup>

### 1.2.1. The agricultural sector

#### 1.2.1.1. Factors of production

Syria is not a land resource rich country. In fact, cultivable land accounted for only 5.9 million hectares out of a total area of 18.5 million hectares (Table 1.1), that is only 32% of total. Most of available land is steppes and pastures (44.7% of total) and uncultivable land (20% of total). In 2004, the actual cultivated area was about 4.7 million hectares, and the rest was rainfed land. However, cultivable land increased between the 1997-2000 and 2001-2004 because of reclamation projects and/or digging new wells that made it possible to reach a share of about 29.1% of irrigated land on total cultivated land.

**Table 1.1** Land use 1997-2004

Item				Average 1997-2000 ha	Average 2001- 2004 ha	Average yearly growth rate %
<b>Uninvested land</b>				502,535	449,163	-2.77
<b>Invested Land</b>	<b>Actual cult</b>	<b>Irrigated</b>	<b>Crops</b>	1,061,109	1,194,964	3.01
			<b>Trees</b>	133,158	155,039	3.88
			<b>Total</b>	1,194,267	1,350,004	3.11
		<b>Rainfed</b>	<b>Crops</b>	2,840,431	2,593,566	-2.25
			<b>Trees</b>	654,907	688,959	1.28
			<b>Total</b>	3,495,339	3,282,525	-1.56
	<b>Total</b>			4,689,606	4,632,529	-0.31
	<b>Fallow</b>			775,368	836,111	1.90
<b>Total invested land</b>			5,464,975	5,468,640	0.02	
<b>Total cultivable Land</b>				5,962,715	5,917,803	-0.19
<b>Uncultivable Land</b>				3,715,894	3,712,642	-0.02
<b>Steppes and Pastures</b>				8,294,155	8,306,307	0.04
<b>Forests</b>				540,411	581,219	1.84
<b>Total Area</b>				18,517,971	18,517,971	

Source: CBS,  
2005

Syria has experienced an increasing water deficit in last years because of an increasing water demand and repeated droughts. Yet, the situation differs across different basins. The deficit concentrates in Al Khabour and Euphrates basins, where the most water consuming crops (wheat and cotton) are mostly grown. During the 1998-2000 (drought period) the average volume of the surface water resources totaled 6.7 billion cubic meter annually and increased to 7.1 billion cubic meter in 2001-2003. The volume of ground water increased from 3.8 billion cubic meter in the first reference period to 4.7 billion cubic meter in the second (Table 1.2). In 2004, the total irrigated area was 1.4 million hectare but only 15.0% of it is irrigated by using modern methods (MAAR, 2005).

<sup>4</sup> For a more detailed analysis of the performance of Syrian agriculture in last year, the reader is referred to chapter 3

**Table 1.2** Average of available water resources 1998–2003 (million cubic meter)

Item	1998	1999	2000	2001	2002	2003
<b>Underground water</b>	4.7	3.6	3.0	3.8	4.4	6.1
<b>Surface water</b>	7.0	6.7	6.4	6.7	7.1	7.5
<b>Total</b>	11.7	10.2	9.4	10.4	11.5	13.6
<b>Other resources</b>	3.0	3.0	3.1	3.2	3.4	3.5
<b>Total available</b>	14.7	13.2	12.5	13.7	14.9	17.1

Source: Ministry of irrigation, 2004

Agriculture is still an important sector from the viewpoint of employment. In 2004, the agriculture labor force contributed to about 17.1% of the total labor force, ranking as the third employment sector in Syrian economy (CBS, 2005). The level of wages in the agricultural sector is markedly below the ones of other sectors. In 2004, 80% of wages were below SP 5,000 per month.

Machinery increased between 1997-2000 and 2001-2004 due to the expansion of cultivated land. For instance, tractors increased by 10.5%, sprayers by 4.2%, and irrigation pumps by 9.5% due to the modernization of the irrigation system (CBS, 2005).

The government controls directly through parastatals or indirectly through the cooperative system the supply of agricultural inputs, though the role of the private sector is increasing. The average annual value of consumed fertilizers decreased from SP 6,551 million in 1997-2000 to SP 5,645 million in 2001-2004. Comparing the first and the second period of analysis, the annual average value of used pesticides decreased by 3.5% due to the adoption of biological control, especially in fruit trees like citrus. Weed control covered an average about 900 thousand hectares per year during the period 2001-2003. The area under weed control had increased by about 25% between the year 2000 and year 2003, while the intervention in disease and insect control remained stable for the same period (SOFA, 2005). The average value of seeds was almost stable during the studied period, totaling SP 10,460 million (9.6% of the total agriculture inputs value) in 1997-2000 and SP 10,537 million (10% of the total agriculture inputs value) in 2001-2004.

Agricultural credits are advanced by the Agricultural Cooperative Bank (ACB) to the public, cooperative and private sector. In 2004, The ACB provided loans accounted for SP 6.4 billion, 80.7% of which for short term loans, while the share of medium term loans was 18.3% of total, only 1% for long-term loans (MAAR, 2005).

#### 1.2.1.2. Agricultural production

Cereal area decreased by 3% over the period 1997-2000 to 2001-2004 (Table 1.3), accounting for 64.6% of the total area in the last four years, although the area of specific crops changes within this category with an increase of about 56,000 hectares for wheat, balanced by a decrease of the area of barley and maize by 191,000 and 3,176 hectares respectively. The average yearly wheat production was 4.7 million ton in 2001-2004, that is 46.6% higher than the yearly production in the first period. Barley production increased even more, almost doubling from 622,000 ton in 1997-2000 to 1,120,000 ton in 2001-2004 (MAAR, 2005).

**Table 1.3** Development of the area and production of crops 1997-2004

Crop	Average 1997-2000		Average 2001-2004		Average yearly growth rate %	
	Area ha	Production ton	Area ha	Production ton	Area	Production
Wheat	1,691,007	3,234,927	1,747,594	4,742,629	0.8	10.0
Barley	1,461,483	622,234	1,270,232	1,120,335	-3.4	15.8
Lentils	133,341	89,534	134,128	151,002	0.1	14.0
Chickpeas	88,639	59,237	91,163	70,262	0.7	4.4
Cotton	259,828	1,018,285	224,094	913,066	-3.6	-2.7
Maize	63,056	239,941	59,881	221,108	-1.3	-2.0
Sugar beet	28,185	1,208,564	24,600	1,290,249	-3.3	1.6
Vegetables	126,800		150,925		4.5	
Tomatoes*	16,329	392,290	15,352	521,066	-1.5	7.4
Potatoes	21,921	434,763	21,209	421,199	-0.8	-0.8

Source: NAPC database

\* the data doesn't include tomato planted under green houses

Legumes accounted for 5.2% of total invested area in 2001-2004, increasing by 15,000 hectares of the area invested in 1997-2000. Comparing the average 2001-2004 with the average 1997-2000, we see the quantity of chickpea production increased by 18.6% in the same period, due to a sensible increase of the invested area. Despite the lentil, planted area did not increase over the studied period, the lentil production increased by 69%, due to the increase of yields.

Industrial crops (cotton, sugar beet, etc.) cover 374,500 hectares that accounted for 7.7% of total cultivated area in 2000-2004. On the whole, the area of industrial crops increased by 3% from 1997-2000, but this increase was not even among different industrial crops. For instance, while the area of cotton decreased by 13.7% due to the decline of water availability, and its production declined by 10.3%, the area under sugar beet also decreased by 12.7%, and its production increased by 6.7% due to the adoption of improved seeds. Areas and productions of other crops like cumin, black cumin and aniseed also significantly increased, when its share accounted for 21.5% of total industrial crop area.

Vegetables as a whole accounted for 3.2% of total area under crops in the period 2001-2004, which is 151,000 hectares (Table 1.3). Tomato and potato are the most important vegetable crops accounting for 10.2% and 14.1% of total vegetable area, respectively. Comparing the two periods under study, the tomato area decreased by 5.9% from 1997-2000 to 2001-2004, while the production increased by 32.8% because tomato yield has grown substantially. The area of potato decreased by 3.3% while its production decreased by 3.1% over the studied periods.

The area under fruit trees was 826,558 hectares in 2001-2004, accounting for about 17.8% of the total cultivated land, with an increase of 5.9% vis-à-vis 1997-2000. The value of trees production increased by 1.7% over the same period. Olive trees covered 509,000 hectares in 2001-2004 mostly grown in rainfed area, with 10% increase with reference to their area in 1997-2000. On the other hand, the production of olive increased by 22.9% in the same period. Among other fruit trees, citrus witnessed an increase in both invested area and production, while apple and grape areas and productions decreased in the same period. Vice versa, the area of pistachio decreased by 2.5% from 1997-2000 to 2001-2004, while its production increased by 17.6% in the same period.

The animal production record is contrasted: on average the annual number of sheep increased between 1997-2000 and 2001-2004 by 3.5%, while the number of goats and cattle decreased by 5.5% and 2.3%, respectively. On the other hand, poultry in-

creased by 24.9%. The value of animal production accounted for 34.5% of the value of agricultural production for the period 2001-2004 that is SP 132,187 million. The most important animal productions in terms of value are red meat and poultry (51.6% of total animal production in year 2003), followed by milk and dairy products (36.5%), eggs (6.6%) and fish (1.5%) (MAAR, 2004).

#### 1.2.1.3. Agro-food processing, marketing and trade

Agro-food processing, e.g. beverages and tobacco, accounted on average for 26% of the total yearly value of the manufacturing industries in Syria in 2001-2003 (SOFA, 2005). Although, the detailed data about the volume of processed agricultural commodities is limited, 100% of wheat sugar beet domestic production and 80% of olive production have been processed by domestic plants in the period 2001-2003. At present, both private and public companies operate in traditional industrial sectors covering dairy products, biscuits, oils, tomatoes, and pasta. The private sector is acting in active manner to enter new markets such as frozen food, fruit juices, snacks, pickles, nuts and olive oil.

According to the data available for 2003, the General Establishment for Cereal Trade and Processing marketed 3,582,668 ton of wheat, 134,954 ton of barley, and 31,404 ton of lentil. For the industrial crops, the sugar factories have received 1,178,101 ton of sugar beet, (SOFA, 2005).

In 2003, total trade value in Syria was about SP 502 billion. The agricultural trade value was about SP 91 million which accounted for 18% of the total trade and 36% of the agricultural GDP (SAT, 2005). The agricultural trade balance was negative and close to SP 2 billion (pure importer).

#### *1.2.2. Sectoral and Inter-Sectoral Policies*

##### 1.2.2.1. Output price policies

The output price policies differ according to the product typology, i.e. strategic and non strategic crops. Seven crops - wheat, barley, cotton, sugar beet, tobacco, lentil and chickpeas – are considered strategic, such that the government centrally sets their procurement prices<sup>5</sup>. These strategic crops can be divided into two subgroups: cotton, sugar beet and tobacco must be sold to public sector, while wheat, barley, lentils, and chickpeas can be sold to either public or private sector. On the other hand, the non-strategic crops such as vegetables and fruits as well as animal's products are sold freely to the wholesale market directly or via traders.

##### 1.2.2.2. Input price policies

The government involvement in the production and supply of agricultural inputs is still high, though the liberalization reforms of last decade has increased the role of private sector.

##### *Fertilizers*

The Agricultural Cooperative Bank (ACB) distributes to farmers most of imported and locally produced fertilizer either directly or through cooperatives according to the licensed area. The private sector provides the share of fertilizer demand not provided by the public sector. This share accounted for 7.5% and 5.1% of total fertilizer demand in 2003-2004 respectively.

##### *Pesticide and herbicides*

The public sector is responsible for direct intervention in the case of epidemics outbreaks in addition to its responsibility for importing pesticide for public agency (e.g. GESM) So far, private sector is allowed to import and distribute all pesticides, fungicides, and herbicides needed by farmers, have to apply to the Plant Protection Department (PPD) to get an import license

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<sup>5</sup> This unchanged in nominal terms from 1996.

### *Seeds*

The General Establishment for Seed Multiplication (GESM) is responsible for providing and distributing all the required amount of cotton, potatoes and sugar beet seeds, which are distributed to the farmers according to the licensed area. Moreover, GESM distributes also part of wheat, barley, lentils and chickpeas seeds. For other seeds, farmers depend either on their own production from preceding years or on imports for vegetable seeds.

### *Feed*

The government continues to be heavily involved in the provision of feed for the livestock through the General Establishment of Feed (GEF). However, it is remarkable that in last years private operators have been increasingly involved in feed provision<sup>6</sup>.

### *Water policies*

The government ranks water consumption in agriculture as one of the top priorities because agriculture accounts for more than 85% of surface and underground water use. Therefore, the government issued a number of regulations and prepared a plan to change all traditional irrigation systems into modern ones. Loans were granted to farmers for applying modern irrigation systems, aiming to reduce the annual consumption per hectare from 12,400 cubic meter to 7,000 cubic meter (SOFA, 2005). However, the plan has faced some constraints such as high costs, technical and financial problems that slowed down its implementation.

### *Labor and land tenure*

Labor is ruled by the Law No 56 dated of. 29/12/2004, (which amended the old law No 134 of 1958) that regulates agricultural relationships among all economic actors who are involved in the agricultural production process (i.e. landowners, workers, entrepreneurs). This law sets the standard working load as six days per week, eight hours per day. Otherwise, any extra working time will be considered as bonus. Moreover, it sets minimal wages for agricultural workers according to the working region (governorates) and work types (heavy, light). The ad hoc committee in each governorate identifies the minimum wage rate taking into account the standard of living to be approved lately by the Ministry of Social Affairs and Work. Finally, the law prevents children below 15 to be employed as well as women and teenager working at night and in a heavy work.

In terms of property and land use, it is estimated that 61.9% (that is 11.5 million hectares) out of the total Syrian land (18.5 million hectares) is state ownership property, most of it being forests, steppe and non productive land (buildings and public roads). The remaining 38.1%, land is privately operated and is mostly cultivated land, although a minor share of the uncultivated land belongs to this category. Only recently, legislative law no. 56 of 22/12/2004 organized agricultural contracts. Duration of contracts is set low of one year, though renewable. Despite a detailed legal framework, contracted agreements between landowners and tenants are open of a general nature and oral only (FORNI, 2001).

#### 1.2.2.3. Trade and marketing policies

Agricultural trade policies have been framed according to the ongoing economic reform. In this regard, the subsidies on imported inputs were eliminated and some restrictions were removed. The private sector has been allowed to export and import most of the commodities which used to be controlled by the public sector except wheat, cotton, and tobacco, which are still restricted by the public establishments. In the field of trade liberalization, all exports of agricultural production have been exempted from income tax and agricultural production tax (cf. Legislative Decree no.

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<sup>6</sup> In fact, the quantities of feed produced and sold by GEF decreased from 30% to 17% from 1998-2000 to 2001-2003 (SOFA, 2005).

15 of 3/7/2001); Moreover, exporters have to comply with the standards and specifications required under WTO rules.

For internal marketing, all agricultural commodities are allowed to be freely marketed except for some strategic crops (cotton, sugar beet and tobacco). The Syrian Government encourages the establishment of marketing facilities for all sectors such as storing, sorting, packaging, and transport facilities. Moreover, the Government encourages the establishment agro-industrial plants to reduce market bottlenecks during the production peak periods, and provides incentives for private loans. Many attempts have been done by both private and cooperative sectors to establish group of firms but unfortunately they were not enough to cover the real needs that has led to reduce the profitability by not achieving completely the value added.

#### 1.2.2.4. Processing policies

The government aims at enhancing processing activity to generate more value added and to improve the efficiency of agricultural sector. Consequently, the government issued several regulations, the most important of which is the investment Law no. 10 of 1991 and its amendments by legislative decree no.7 of 2000 that promoted the private sector entry in the agro food processing.

#### 1.2.2.5. Agricultural support services

The upmost objective of the government is improving the performance of the agricultural sector. These objectives could be achieved by a series of intermediate goals such as credit lending, agricultural research, extension services and infrastructure provision.

##### *Credit*

Agricultural credit is provided by the ACB. Short-term loans finance the purchase of agricultural inputs such as seeds, fertilizer, etc. Interest rates for short term loans, granted for periods not exceeding 300 days, depends on the volume of the loan and on the status of the borrower (cooperative members vs. individuals) as follows: 4% for cooperative members and 5.5% for individuals, for loans less than SP 50,000, and 6% and 7.5% respectively for loans exceeding that threshold. These loans have to be reimbursed by 1<sup>st</sup> of August for winter crops and by 1<sup>st</sup> December for summer crops. Medium-term loans are advanced for a period of five years to finance irrigation investments, greenhouses, purchase of animal, poultry farm equipments, land reclamation, fence and terrace construction, and others. The interest rate for medium loans is 5.5%. Finally, long-term loans are advanced for land development, building storage and cold storage units, forestry and fruit trees projects at an interest rate of 5.5% for a period not exceeding 10 years. In order to help farmers to overcome the effects of the drought, the ACB rescheduled the repayments on short-term loans for the seasons 1999/2000 to 2001/2002, to be given back equal installments over 5 years with the first installments to be paid on 1/8/2003. All overdue interests and deferral penalties were waived.

##### *Agricultural research*

The General Commission for Scientific Agricultural Research (GCSAR) was established under Law no. 42 of 2001. This establishment plays a major role to improve the agricultural research in the country. The GCSAR focus on different areas, belonging to traditional research field, like crops, natural resources, livestock, horticulture fields, etc , as well as modern biotechnology, food technology, genetic resources, etc

##### *Extension*

The Agricultural Extension Directorate of MAAR provides extension services free of charge through a countrywide network of extension units. The total number of extension units in 2004 was 1,063 units all around Syria. The total number of staff (agronomists, agronomist assistants, veterinarians, and veterinarian assistants) is around 10,327 people. Extension activities are implemented through extension fields

and field days Extension programs cover primarily eight crops (wheat, maize, sugar beet, cotton, olives, citrus, grapes, pistachios) as well as cattle and sheep.

Rural women are receiving significant attention by extension activities, where specialized training programs devoted to housing economics, handcrafts, and some income generating projects aiming at activating its role production process and rural development. Furthermore, the Department of Rural Women was established recently.

#### *Rural infrastructures*

The Syrian government provides infrastructure according to the available resources, especially agricultural roads due to their important role in marketing activities. The responsibility for the construction of agricultural roads was within the mandate of MAAR until 2003, and nowadays the Ministry of real estate is in charge of this activity (MAAR, 2005).



## **2. The Syrian Agricultural Development Strategy (2001-2010)**

A strategy embodies both a vision of what the sector should look like in the future and a road map showing how to fulfill that vision<sup>7</sup>. Therefore, a strategy has two main essential points of departure:

- a) an assessment of the current situation of the sector, and
- b) the politically determined weights given to the general socio-economic objectives.

Within the framework of the general policy that defines the nature of the general objectives, there are three steps to establish a development strategy for the agricultural sector:

- a) specify the socio-economic sectoral objectives that should contribute to the overall global objectives,
- b) identify and assess the main sectoral structural features, highlighting the factors representing both development opportunities and constraints,
- c) set broad priorities among alternative sets of policies and institutions consistent with objectives and structure

In this chapter, we will recall the main contents of SAS, setting also a framework for the analysis within which the MTR exercise will be carried out. Namely, the next section will focus on the objectives of the SAS and on the evolution intervened since then as reported in official government documents. Then, we will recall the actions and the targets of the original SAS, reclassifying them according to the new set of objectives intervened since year 2000.

### **2.1. Objectives**

In order to pursue the general objectives of agricultural and rural development, the SAS (MAAR, 2000) stated the following set of objectives:

1. improvement of the producer income;
2. increase the contribution of agriculture in the GDP;
3. expansion of the cultivated area through the increase of both irrigated and rain-fed farming;
4. optimal utilization and conservation of the natural resources;
5. self-sufficiency of the main food staples, enhancing the Syrian products competitiveness and introducing alternative crops;
6. introduction of modern technologies;
7. enhancement of agro-processing and marketing activities, so that the national share of added value as well as the value of exports can be increased.

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<sup>7</sup> De Benedictis, 2000

The rationale behind this set of objectives represents a coordinated and comprehensive framework for the strategy. We can acknowledge four main concerns that frame this set of objectives:

- a) the improvement of the standards of living, which represents the stepping stone of the SAS since increasing producers' income and improving their living conditions are the most important contributions to the welfare of rural population ;
- b) the modernization of the Syrian agriculture is one of the strategic options by means of which the agricultural sector can contribute to the overall welfare of Syrian citizens, namely through (i) meeting the increasing needs of a fast growing population and an opening economic system, and (ii) a better use of natural and agricultural resources;
- c) the enhancement of the competitiveness of the Syrian agro-food products in an increasing integrated and globalized world market is the second option pursued to contribute to the welfare of Syrian society;
- d) the focus on strategic crops is reaffirmed as a development priority for both domestic consumption and demand by domestic industry.

More recently, the Cabinet on its session of 8<sup>th</sup> February 2005 endorsed a study conducted by MAAR on "The Agricultural Problems and the Proposed Policies for Agricultural Sector Development" (MAAR, 2005), which made an assessment of the current situation of Syrian agriculture. This document sets the following set of objectives

1. increasing the agricultural growth rate and improve the agricultural producers' income;
2. optimizing use and conservation of natural resources;
3. meeting the domestic demand for main food staples (wheat, legumes, etc.);
4. providing domestic processing plants with raw materials in sufficient quantities and appropriate quality;
5. improving rural infrastructure and services and developing local and traditional industries;
6. attracting and enhancing national, Arab and international investments in agriculture and related industries;
7. developing and modernizing agricultural regulations to ensure optimal use of agricultural
8. supporting and improving agricultural processing and marketing with the aim of enhancing accrued value added and valorising comparative advantages.

These objectives are very close to the ones listed in the original SAS (MAAR, 2000) and reflect its same concerns – e.g. the focus on the improvement of producer's income, the need to meet the domestic demand of final consumption (food staples) and intermediate goods (raw materials), the need to modernize the agricultural sector. However, a careful analysis of the whole document shows, along with these concerns, a stronger emphasis on the need to make the Syrian agricultural development model more sustainable, both from the financial and the environmental point of view. Consequently, the following three issues seem to be crucial:

- a) the conservation of agricultural and natural resources;
- b) the diversification of economic activities in rural areas;
- c) the creation of a better environment for private investment (both national and international) in the agricultural sector.

These two documents, "Orientations of the Syrian Agricultural Strategy" of 2000, and the 2005 document of MAAR, provide the framework for carrying out the MTR

assessment, that fully takes into account their objectives and orientations. In doing this, the next sections will recall the actions listed in original SAS, trying to reorganize them in a coherent framework that takes into account the changes/integrations of the objectives contained in the 2005 document above (cf. MAAR, 2005).

## 2.2. Policies and programs

An agricultural strategy is a document which sketches a coordinated set of policies designed to pursue socio-economic development objectives. Its building blocks can be seen as three types of interventions that may affect the agricultural sector, characterized by an increasing degree of specificity, namely:

- a) policies, which are made up by procedures and programs to pursue general objectives like increase productivity, improve marketing conditions, etc.;
- b) programs, that is a group of projects and actions that aim at achieving specific objectives whose goal is the implementation of the sketched policies and the achievement of strategy's objectives and orientations;
- c) actions, which concretely implement the programs specifying their schedule.

The Orientations of SAS considered six groups of interventions that, according to the classification above, can be mostly meant as programs (cf. Annex 1): natural resources, plant production, livestock production, support services, production inputs, and agricultural policies.

In the MTR all those interventions have been re-classified according to the above-mentioned "building blocks" – i.e. policies, programs, and actions. This reorganization was needed for two main reasons: a) from the operational point of view, the evolution of the SAS objectives since 2000 required a reclassification to accommodate the intervened changes; b) from the methodological point of view, the definition of the meaning of policies, programs and actions makes possible their use unambiguously and uniformly throughout the document. As a result, the MTR considers five policies that are disaggregated into fourteen programs as summarized in Table 2.1<sup>8</sup>.

**Table 2.1.** Policies and programs of the SAS Mid-Term Review

<b>Policies</b>	<b>Programs</b>
A – Production Oriented	A.1 – plant productin
	A.2 – Livestock
	A.3 – Inputs
B – Marketing and Processing	B.1 – Pricing
	B.2 – Processing
	B.3 – Marketing
C – International Trade	
D – Institutional Oriented	D.1 – Research
	D.2 – Extension
	D.3 – Training
	D.4 – Institutions
E – Natural Resources Conservation and Rural Development	E.1 – Land
	E.2 – Water
	E.3 – Al Badia
	E.4 – Infrastructures

The programs listed in Table 2.1 are further broken down into actions whose contents are summarized in section 2.3, while details in terms of targets and goals to be achieved by 2003 and 2005 are reported in the appendix (cf. Annex 4).

<sup>8</sup> In order to facilitate the matching between the SAS and the MTR, Annex 3 reports a two-entry matrix where the original SAS programs can be translated into MTR policies and programs.

## **2.3. Actions, targets, and goals**

The above mentioned policies and programs are articulated in specific actions that only in some cases specify quantitative targets. Conversely, all actions set qualitative goals.

### *2.3.1. A-Production oriented policies*

These policies are all directly related to the improvement of agricultural production. They refer to three main areas: plant production, animal production and input production and provision.

#### 2.3.1.1. A1-Plant Production

This program focuses on cereals, cotton, feeds, fruit and vegetables. This program aims at increasing irrigated and rainfed yields (by 3% and 1% per year up to 2003, respectively), meeting the requirement of agro-food and manufacturing industry (e.g. providing the raw materials required by the domestic industry, planting new varieties needed by industry, and improving rural industries), reducing the cost of production through the adoption of modern technologies and planting high yield varieties that are adoptable to the local environment, and expanding and enhancing the biological control (e.g. improve the agricultural quarantine centers, develop the post entry quarantine and establish isolation gardens, improve the seed lab and establish a diagnostic lab, enhance the air control unit capacities and support it with airplanes, etc.).

#### 2.3.1.2. A2-Livestock

The objectives to be pursued by this program include the adoption of artificial insemination on a wide scale and the provision of its requirements, the genetic improvement of local races (e.g., establishing stations for the multiplication of improved livestock semen and disseminate improved races), the increase and improvement of the local production of vaccines (e.g., assessing the vaccine demand, identifying the locally produced types) to cover the local demand and export the surplus, the adoption of the livestock diseases diagnosis programs (e.g. introducing new diagnostic techniques), and the local production of high quality veterinary medicines (increasing it by 10% per year by year 2003).

#### 2.3.1.3. A3-Inputs

This program aims at providing the main inputs required by Syrian agriculture, particularly chemical fertilizers at reasonable prices and on timely manners (also eliminating the intermediate part of the marketing chain), improved seeds for crops and vegetables (e.g., supporting the GESM), and healthy and certified high yield seedlings (e.g., establish new public nurseries, introducing adaptable new varieties, etc.) in order to meet the requirements of the international markets.

### *2.3.2. B-Marketing and Processing Policies*

Marketing and processing policies can be broken down into three specific programs: pricing, processing and marketing.

#### 2.3.2.1. B1-Pricing

The only objective that belongs to this program is the adoption of an appropriate pricing policy on strategic crops to ensure the implementation of the agricultural plan. However, by 2005 the SAS targeted to reduce the priced crops and restrict the pricing to wheat (which is the main food staple) and other crops process by the public plants (cotton, sugar beet and tobacco), and price alternative crops to encourage farmers to produce them.

#### 2.3.2.2. B2-Processing

The objectives pursued by this program aim at developing local rural industry based on livestock products (e.g., providing producers with the required loans, enhancing

agro-processing plants, securing refrigerated trucks), developing the post harvest practices and improving the products quality (e.g., providing the required loans for establishing pack houses and installing grading and sorting lines).

#### 2.3.2.3. B3-Marketing

The only objective under this heading aims at developing the domestic marketing activities. The 2003 actions classified as domestic marketing can be summarized as follows: establishing marketing cooperatives and cold storage facilities, facilitate modern transport means acquisition. By 2005, the planned actions are the improvement of domestic marketing on all levels and continue the elimination of export restrictions.

#### *2.3.3. C-International Trade Policies*

Under this heading, we group all actions that have in common the objective of enhancing the international trade of agricultural products. Specific objectives to be pursued are the production of an export surplus of products that enjoy a comparative advantage, the enhancement of the competitiveness of these products (e.g., removing export restrictions, adopting export promotion measures, identifying control agencies and establishing labs that give quality certificates, concluding bilateral, signing Arab and international agreement to facilitate agricultural trade flow and obtain preferential treatment for agricultural exports), the production of the proper quantities and qualities according to the marketing windows, the development of post harvest practices, the improvement of the products quality, and the development of international marketing activities (e.g., establishing a market information system to provide producers and exporters with the required information on the foreign markets prices, qualities and marketing windows).

#### *2.3.4. D-Institutional Oriented Policies*

Under this heading, we group a set of programs that focus on institutional issues, such as research, extension, training and institutional reform.

##### 2.3.4.1. D1-Research

This program aims at developing the agricultural research strategy, restructuring the research programs and focusing on modern research techniques, establishing modern research centres equipped with the research requirements, developing the genetic resource conservation process, organizing and developing the agricultural research (e.g. developing livestock research stations, establishing genetic resource banks), and issuing the Agricultural Scientific Research Commission establishment decree to encourage researchers and benefiting from the expertise in the field of agricultural research (e.g., attracting qualified researchers from different levels, securing fellowships, concluding cooperation agreements with research centres to ensure the sustainability of post graduate and other types of external training).

##### 2.3.4.2. D2-Extension

Increasing the number of extension units (15/year by 2003, 20/year by 2005) and supplying them with the required inputs (e.g., transport means and other equipments), training agricultural engineers and helping them to implement the extension research programs are the main objectives of the extension program.

##### 2.3.4.3. D3-Training

This program aims at developing the training centres, providing them with the required equipments (namely, in Damascus, Dara'a, Homs) and establishing modern training centers in the rural areas, and establishing agricultural high schools and institutes (3 intermediate and 2 high institutes) and supporting them with the required labs and audio visual aids.

##### 2.3.4.4. D4-Institutional reform

Under this program, the following objectives have to be pursued: give priority to the agricultural sector compared to other sectors and increase the relevant investments (at an annual rate of 15% for research, education and extension and 10% for other projects by 2003), identify the role played by the private, public, cooperative and joint sectors within the framework of economic diversification (particularly through the establishment of specialized marketing companies, the promotion of producers units, and the establishment of a public export agency to open new markets and control exports), eliminate responsibility fragmentation among different ministries and institutions involved in agriculture, and reconsider the finance policies (e.g., increasing the ACB capital and expanding its operations, increasing the agricultural loans by 12%/year of the total loans, and increasing the long-term share by 5% for the establishment of the production base by 2003).

#### *2.3.5. E-Natural Resources and Rural Development Policies*

Under this heading are grouped all programs that refer to the agricultural resource base and rural development.

##### 2.3.5.1. E1-Land

It includes optimal utilization of cultivable land and adoption of crop structures and agricultural rotations that guarantee sustainable production, and mountainous and hilly land reclamation (at an average rate of 33,000 ha/year) and planting with adaptable fruit trees (24,000 ha by 2003) and crops (9,000 ha by 2003).

##### 2.3.5.2. E2-Water

Two objectives are listed under this program: the expansion of the area irrigated from surface and replenishable sources (e.g., increasing the public system irrigated land at an average of 20,000 ha/year) and the improvement of public irrigation systems efficiency (increasing it in the public irrigation systems by 20% by 2003 and by 30% by 2005), and the rationalization of water use through the adoption of modern irrigation systems (50% of the irrigated area by 2003, and 100% by 2005), the control of water over-exploitation, the improvement of water return and the expansion of irrigated area to the maximum possible level.

##### 2.3.5.3. E3-Al-Badia

Al Badia development projects aim at restoring the vegetation cover (through increasing the pastoral seedlings up to 15 million/year, producing 80,000 tons of pastoral seeds and increase the direct sowing area and protecting 300,000 ha/year, organize grazing on 300,000 ha on natural steppes) and providing the water required by the population and livestock.

##### 2.3.5.4. E4-Infrastructures

Instrumental to rural development is the establishing of the required infrastructure to ensure the product and input transport and other facilities. By 2003 program has only one target, i.e. enhance the support services such as the establishment of 1,000 km/year of agricultural roads to service 200,000 hectares, and one goal, i.e. establish wholesale markets in the Syrian governorates. By 2005 the objectives are increasing the agricultural roads investments and continuing the development of other services and information systems.

## 3 . Achievements of the Syrian Agricultural Strategy

### 3.1 SAS Actual achievements

The first step towards the assessment of the SAS is to carry out a qualitative and quantitative analysis of the actions mentioned in section 2.3. This is useful because it highlights both the key elements of success and eventual failures of the strategy, and provides some insights about how the strategy should be adjusted. In the SAS specific objectives are to be implemented through programmes and related actions of quantitative and qualitative nature. The MTR addresses the actual achievements of the SAS with specific reference as classified in section 2.2. As mentioned above, the SAS breaks down the ten years into three sub-periods identified according to two checkpoints, namely 2003 and 2005. Therefore, the MTR takes into account achievements up to 2004, having as a reference the comparison between 1997-2000 and 2001-2004<sup>9</sup>.

Performed as a before-after analysis, four years average per each indicator for the period 1997-2000 (before the SAS implementation) and for the period 2001-2004 (after its implementation) have been calculated in order to avoid fluctuation, except for both crop productions and productivities. In fact, four years (1997 to 2000) were considered for irrigated crops, and five years (1996 to 2000, though excluding 1999 that was a year of extremely bad climatic conditions) were considered for rainfed crops as well as for mixed crops (irrigated and rainfed)<sup>10</sup>. Absolute differences and average annual growth rates have been computed, and eventually compared to the planned growth rates. These approaches have been used in the cases of quantitative targets in the SAS and whenever quantitative information for the assessment was available. For non-quantitative SAS objectives and for unavailable data a qualitative assessment of actual achievements has been performed.

#### 3.1.1 A. Production Oriented Policies

A first important objective stated in the SAS is the enhancement of agricultural production. In light of this objective, the SAS includes both vertical and horizontal development activities, aiming at significantly increasing plant as well as livestock production, in terms of irrigated areas, yield and overall production.

##### 3.1.1.1 A1-Plant production<sup>11</sup>

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<sup>9</sup> The analysis is based on the data available up to 2004 or more updated data whenever it is available.

<sup>10</sup> For production computation, each crop stated in the SAS includes both irrigated and rainfed production data, except cotton (totally irrigated). Therefore, the computation was based on five years from 1996 to 2000 excluding 1999. Olive production computation essentially was based on four years averages for both the before (1996-1999) and after (2001-2004) SAS implementation, because of annual alternate bearing.

<sup>11</sup> The SAS listed under "plant production program" the increase of irrigated and rainfed yield. However, more detail targets were set at the beginning of SAS section 2 under the "specific objectives" headings. Here, we consider the latter because they are more comprehensive, including not only yields but also the area and production increase, as well as more detailed that they are crop product specific. Consequently, the title of this action has been changed as appears in this section.

### *Irrigated and rainfed production increase*

SAS addresses specific objectives of area increase distinguishing between irrigated, trees and forest areas. The first two objectives are discussed herewith, while forest area objective is discussed under the section 3.1.5 (Natural Resources Conservation and Rural Development Policies).

Irrigated area increased over the period 1997-2004 by approximately 156 thousand hectare (i.e. 13%). This increase occurred with an annual growth rate of 3.1%, which is well above the SAS planned target (Table 3.1). Trees area also exhibited an increase (6% over the first reference period) and its annual growth rate (1.5%) was less than the planned target.

**Table.3.1** Irrigated and trees area achievements (1997-2004)

<b>Item</b>	<b>Average 1997-2000 (ha)</b>	<b>Average 2001-2004 (ha)</b>	<b>Difference (ha)</b>	<b>Achieved growth rate (%)</b>	<b>Planned growth rate (%)</b>	<b>Difference in growth rate (%)</b>
<b>Irrigated area</b>	1,194,250	1,350,034	155,784	3.11	1.5 to 2	1.11 to 1.61
<b>Trees area</b>	120,120	137,727	17,607	3.48	3 to 4	-0.52 to 0.48

Source: NAPC database

Yields per hectare have tended to fluctuate substantially over the period 1996-2004 for most of the field crops showing a similar pattern in both irrigated and rainfed areas. Wheat, irrigated lentil, rainfed lentil, irrigated chickpeas show significant yield increases (above 25%) over the period (Table 3.2), that can be explained by the very favourable weather conditions of early 2000s. Similarly, the achieved yield growth rates of such crops are well above the planned ones. Conversely, cotton and rainfed chickpeas only achieved a modest 6% and 7% yield increase, respectively, with actual growth rate just above planned ones for chickpeas and below the planned target for cotton.

**Table.3.2.** Crop Productivity achievements, 1996-2004

Item	Average 1996-2000 (ton/ha)	Average 2001-2004 (ton/ha)	Difference (ton/ha)	Achieved growth rate (%)	Planned growth rate (%)	Difference in growth rate (%)
Wheat	2.12	2.72	0.60	6.43	3 to 5	1.43 to 3.43
Cotton	3.84	4.08	0.24	1.51	3 to 5	-3.49 to -1.49
Irrigated lentil	1.24	1.55	0.31	5.65	3 to 5	0.65 to 2.65
Rainfed lentil	0.87	1.12	0.25	6.50	1	5.5
Irrigated chickpeas	0.87	1.13	0.25	6.56	3 to 5	1.56 to 3.56
Rainfed chickpeas	1.48	1.59	0.11	1.81	1	0.81

Source: NAPC database

Noticeably, the SAS sets crop production targets based on specific growth rates. There were substantial differences in production performances across crops (Table 3.3). Production increased substantially throughout the period 1996-2004. Production of wheat (33%), barley (21%), lentil (30%), and olive (12%), while cotton was characterized by significant fluctuation and eventually show a decrease over the period (-7%).

**Table.3.3** Plant production achievements (1996-2004)

Item	Average 1996-2000 (ton)	Average 2001-2004 (ton)	Difference (ton)	Achieved growth rate (%)	Planned growth rate (%)	Difference in growth rate (%)
Wheat	3,582,140	4,742,629	1,160,489	7.27	3 to 4	3.27 to 4.27
Barley	929,106	1,120,335	191,229	4.79	1	3.79
Lentil	116,580	151,002	34,423	6.68	1 to 1.5	5.18 to 5.68
Cotton	976,761	913,044	-63,717	-1.67	1.5 to 4	-5.67 to -3.17
Olive	675,413	754,335	78,922	2.80	9 to 12	-9.2 to -6.2

Source: NAPC database

These patterns are reflected also in growth rates. Wheat, barley, lentil, and olive present positive growth rates, although below the planned one in the case of olive (the others being substantially above the target). Of course, cotton growth rate was negative.

#### Adopting new crop and fruit varieties in the environmentally appropriate areas

Some alternative crops like rapeseed and new varieties of fruit were introduced in environmental suitable area, but the areas planted by it. Table 3.4 and 3.5 will show the introduced varieties.

**Table.3.4** New crop varieties introduced after SAS implementation 2001-2004

Crop	Varieties	Date of adoption	The environmental appropriate area
Durum wheat	Douma 1	2002	SZ1
	Sham 7	2004	Irrigated area
	Bouhouth 9	2004	Irrigated area
Soft wheat	Sham 8	2000	Irrigated area
	Sham 10	2004	Irrigated area
	Douma 2	2004	Rainfed SZ2
Barley	Fourat 7	2002	SZ3
	Fourat 6	2004	SZ2
Cotton	Aleppo 118	2003	Aleppo and Idleb area
Lentil	Idleb 3	2002	-
	Idleb 4	2002	-
Chickpeas	Ghab4	2002	-
	Ghab 5	2002	-
Maize	Faihaa	2002	Irrigated area

Source: GCASR, 2005  
SZ: Stabilisation Zone

GCASR introduces adaptable new fruit varieties as alternative crops, such as kiwi, avocado, banana, papayas, mango, and guava. Table 3.5 shows the number of varieties of some fruit trees introduced, to be grown in adaptable area.

**Table.3.5** The number and type of new fruit varieties introduced from other countries

Fruit tree	Avocado	Banana	Kiwi	Papayas	Mango	Guava
No. of varieties	4 (Egypt)	3 (Egypt) + 8 (domestic)	6 (Iran)	NA	4 (Egypt)	5 (Egypt)
No. of delivered trees	5100	300	NA	5000	NA	NA

Source: GCASR, 2005  
NA: no information

#### Meeting the requirement of agro-food and manufacturing industry

Every year the MAAR and the Ministry of Industry in collaboration with other relevant institutions set the targets for industrial crop supply to the domestic industries. Table 3.6 represents the average annual quantity for the period 2001-2004. Despite many new crop varieties have been introduced, such as two varieties of potato for processing, a good quality of cotton variety (Aleppo 118) for textile, and *Faihaa - 1 variety* for maize in order to meet industry requirement.

**Table.3.6** Annual industrial crops provided to the manufacturing industry (thousand tons)

Cotton	Sugar beet	White onion	Cotton seed	Grape	Beer barley
1,000	1,300	16	300	16	11

MAAR, 2005

Industrial public companies are usually complain the lack of raw materials in the right quantity to implement their production plans, probably due to poorly organized relationships among farmers and marketing institution.

Moreover, this action includes also the improvement of rural industry as one of the 2005 objectives. From the available information, investments in rural industries are still negligible.

#### Reducing the cost of production through the adoption of modern technologies

Despite this action refer in its title just the cost reduction, it actually perused the improvement of farmers income through both the increase of crop productivity and the reduction of production cost.

Three interventions belong to this action were adopted to reduce the cost of production. The first one was devoted to the adoption of 14 high yield varieties of 7 crops (Table 3.4, 3.7).

**Table 3.7** The current and planned crops productivities (research results)

Crop	Current productivities (ton/ha)*	Planned productivities (ton/ha)			
		2005	2010	2020	
Irrigated wheat	7.5	8	8.5	9	
Rainfed wheat	Stabilization Zone 1	4.3	4.4	4.7	4.9
Rainfed wheat	Stabilization Zone 2	2.4	2.5	2.7	2.8
Cotton		4.7	4.9	5.1	5.3
Barley	Stabilization Zone 2	2.5	2.6	2.7	3
	Stabilization Zone 3	1.7	1.8	1.9	2
Chickpeas		2	2.1	2.3	2.5
Lentil		1.3	1.4	1.7	2
Maize		7	7.2	7.7	8.5

Source: GCASR, 2004

\* Figures according to GCASR *researches*

Indeed, adopting new high yield varieties increased sensibly the agricultural revenues. For example, the annual revenue increase for irrigated wheat amounted for SP 5.6 billion for rainfed wheat to SP 2.8 billion, for maize to SP 0.56 billion, and for cotton for SP 5.1 billion.

The second intervention aimed at the adoption of biological control on citrus that led to savings on production cost of about SP 1 billion per year, (GCASR, 2004). Biological control has been started to be adopted in other crops e.g. cotton.

The third intervention aimed at rationalizing the use of fertilizers. In 2004, in order to reduce the rate of fertilizers' application, about 170 thousand soil samples were analyzed for free of charge also to compute the correct amount of fertilizers' needs.

### Biological Control

The SAS included many actions aimed at develop the biological control, namely:

a) Improve the agricultural quarantine centers: About 26 centres allocated throughout the governorates were provided with computers and linked with the centre (MAAR, Plant Protection Department). In addition, the Department of Plant Preservation (DPP) started in 2004 a project with FAO to modify the regulations of agricultural quarantines according to international standards and International Plant Protection Conservation (IPPC) agreement. Moreover, required training courses for the agents of the center have been completed under the supervision of the Arabic Organization for Agricultural Developments;

b) Establish isolation gardens: Presently, a plot was selected to establish post-entry quarantine (isolation gardens) in Rural Damascus, but more funding and a proficient cadre is required for implementation;

c) Improve the labs and establish a diagnostic lab: A new seed lab (Nematode lab) was established in Hama governorate in 2001 in addition to the existing seed lab in Aleppo and provided with the required equipments thanks to the collaboration of the German Agency for Technical Cooperation (GTZ). More recently, the DPP started to establish a central integrated diagnostic lab in Rural Damascus to diagnose diseases, pests, and nematode;

d) Enhance the air control unit capacities and support it with additional airplanes: At present, the number of available airplanes is 12 planes 3 of which for training, as it was before the SAS implementation. In 2005, MAAR issued a contract to purchase 6 planes to support the unit capacity;

e) Syria has been actively seeking pest management techniques and strategies alternative to chemicals. A number of laboratories and mass (insect) rearing stations in the country now produce biological control agents (predator and parasites). In 2004 a national project for improving the biological control was launched and offered SP 514,125 million to establish five stations of an area of 1.5 hectare each for breeding and multiplying the biological control agents (*unpublished data from the MAAR, Agricultural Preservation Directorate*). These stations were established in many parts of Syria to deal with types of pests according to the location climate:

- Aleppo station: for cotton, wheat and olive (producing parasites such as *Trichogramma spp.* and *Habrobracon spp.*);
- Hama station: for pistachio, potato and olive;
- Deir Ezzor station: for wheat and cotton (producing parasites such as *Trichogramma spp.* and *Habrobracon spp.*);
- Damascus countryside station: for apple and vine crops;
- Lattakia station: for citrus and green houses (producing the *Cryptoleamus montrizieri* parasite and the *Aphelinus mali* predator).

### 3.1.1.2 A2-Livestock production

Table 3.8 reports the development of the average animal production over the period 1997-2000 and 2001-2004. It can be seen that all animal productions other than red meat increased over the period: white meat (43%), fish (9%), and milk (16%). However, the picture changes dramatically when we compare achieved growth rates with target growth rates. In fact, all categories grew less than planned, with the exception of white meat.

**Table 3.8** Animal production achievements, 1997-2004

Item	Average 1997-2000 (ton)	Average 2001-2004 (ton)	Difference (ton)	Achieved growth rate (%)	Planned growth rate (%)	Difference in growth rate (%)
<b>Red meat</b>	215,922	202,911	-13,011	-1.54	5	-6.54
<b>White meat</b>	100,260	143,217	42,957	9.32	5	4.32
<b>Milk</b>	1,679,038	1,836,311	157,273	2.26	4	-1.74
<b>Fish</b>	13,452	15,616	2,164	3.80	6	-2.2

Source: NAPC database

### Adopt artificial insemination

The number of artificial insemination over the period 2001-2004 increased by 24%, comparing to the period 1997-2000 (Table 3.9), and the increase in the number of semen was 17%, while liquid nitrogen decreased by 28%. Achieved growth rates, in all cases, were below the planned ones.

**Table.3.9.** Artificial insemination achievements, 1997-2004

Item	Average 1997-2000 (no)	Average 2001-2004 (no)	Difference (no)	Achieved growth rate (%)	Planned growth rate (%)	Difference (%)
<b>Total artificial insemination</b>	605,531	754,467	148935	5.65	10	-4.53
<b>Number of semen</b>	674,809	795,486	120677	4.20	10	-5.80
<b>Liquid Nitrogen</b>	555,826	395,911	-159915	-8.13	?	

Source: MAAR, 2004

The advantages of the artificial insemination, comparing to natural insemination, are: improving cow genes, increasing the meat and milk production, and generating a healthier generation resistant to the diseases.

Moreover, a five-year workplan up to 2020 have been designed by the MAAR, Animal Health Department to increase the number of meat-cows varieties either through two importing meat cows for breeding or oxen for artificial insemination, but currently there are restrictions on imports due to mad-cow disease.

Expand the genetic improvement of local races

The total number of improved cattle of local races increased on average by 19% over 1997-2000 and 2001-2004, while dairy cows increased by 18% over the same period (Table 3.10). About 1669 heads of improved cattle were distributed to the livestock holders to improve their cattle in order to increase the meat as well as milk production. The total improved cattle showed a significant increase in 2004 compared to 2003 (12%), and its average growth rate over the reference period was 4.4%. The population of *Al-Shamy* goats decreased over the reference period of 34%.

**Table.3.10** Improved local races achievements, 1997-2004

Item	Average 1997-2000 (no)	Average 2001-2004 (no)	Difference (no)	Achieved growth rate (%)	Planned growth rate (%)	Difference (%)	
<b>Oxen</b>	2,756	3,407	651	5.45	-	-4.55	
<b>Calves</b>	156,263	188,445	32,182	4.79	-	-5.21	
<b>Dairy Cows</b>	<b>Milked</b>	271,577	335,126	63,549	5.40	-	-4.60
	<b>Non-milked</b>	114,194	120,212	6,017	1.29	-	-8.71
	<b>Total</b>	385,772	455,337	69,566	4.23	-	-5.77
<b>No. of cattle</b>	544,790	647,189	102,399	4.40	10	-5.60	
<b>Al-Shami goat</b>	46,750.00	30,784.50	-15,965.50	-9.92	-	-	

Source: MAAR, 2005

Increase and improve the local production of vaccines

The MAAR with cooperation of many international organizations implies projects aiming at improving veterinary services. Except Brouseila vaccine, all the other types (Enterotoxaemia, Black leg, Anthrax, Sheep and goat pox, Rinder pest, LBR, Newcastle lasota, Newcastle B1, Newcastle Komaroff , Colon, Bronchitis 1, Bronchitis 2, Gumboro, AE (avian encephalomyelitis), and Fowl Pox) are locally produced (MAAR, AHD, 2005). About 120 million doses per year should be produced to meet the local demand and export the surplus (the current status of agricultural sector 1992-2003 p67). While, only 228,022 dosages were produced over the period 2001-2004.

**Table 3.11** The development in vaccine over the period 1997-2004

Item	Average 1997-2000 (no)	Average 2001-2004 (no)	Difference (no)	Growth rate (%)
<b>Total</b>	161,791	228,022	66,231	8.96

Source: MAAR, 2004

Presently, 100 thousand dosages of Brouselia vaccine were produced by a new laboratory, and continuing efforts are still ongoing to establish a firm to produce the foot and mouth disease vaccine.

#### Adopt livestock diseases diagnosis programs

In order to improve the veterinary services, the government is implementing several projects in collaboration with international organizations. A successful project was executed in 2001 with the support of FAO to conduct livestock diseases surveys, particularly for transponder diseases such as small ruminants plague, etc. Another co-operation project with FAO started to produce Brucellosis Vaccine, with the objective of providing 4 million dosages for sheep and 160 thousand for cattle. Investigations on BSE (mad cow) disease are conducted with the support of France through clinical diagnosis and field surveys. Moreover, a new national project related to the epidemic diseases investigation is included within the investment plan of the MAAR 2005-2020 (MAAR, 2004). In addition, in 2004 a new mechanism called *ELIZA* was adopted (a more precise and faster method compared to the old methods) to diagnose the Brouselia, foot and mouth disease, and poultry diseases. Other methods are also used such as fluorescent and spectrophotometer.

Since 2003, seven new laboratories for diseases diagnosis were established throughout the country, adding to the three already existing. Presently, a new division in the AHD, called chemical and toxin division, is being developed to carry out blood analyses, liver functions and its enzymes analyses and diagnosis of deficient of blood composition (such as calcium, phosphor, minerals, protein, glucose).

#### Locally produced high quality veterinary medicines

There are 38 private factories producing veterinary medicines in Syria, in addition to one public factory (*Tamico*). These plants produce different types of veterinary medicines. Vaccination services use both locally produced and imported vaccines, which are provided free of charge for the regularly vaccination and epidemics. Care and veterinary medicines are provided at the expense of livestock and poultry breeders.

#### *3.1.1.3 A3-Inputs*

This program aimed at providing all agricultural inputs, particularly improved seeds, chemical fertilizers, and healthy seedling according to the following objectives.

#### Chemical fertilizers at reasonable prices and available on time

A more efficient provision of fertilizers is persuaded through allowing the private sector to import the chemical fertilizer as a first step towards input liberalization. The total amount of fertilizer provided by the private sector in 2003 and 2004 is reported in Table 3.12. It is noticeable that there was a decline in the contribution of the private sector, that can be explained by the increase of the world fertilizer prices, that makes private fertilizer law competitive vis-à-vis the public provided fertilizes.

**Table 3.12** Total fertilizer quantities provided by private sector, 2003-2004

<b>Item</b>	<b>2003 (ton)</b>	<b>2004 (ton)</b>	<b>Difference (ton)</b>	<b>Growth Rate (%)</b>
<b>Urea</b>	36,340	22,564	-13,776	-37.91
<b>Ammonium Ni- trate 33.5%</b>	28,778	31,642	2,864	9.95
<b>Sulphate Potas- sium</b>	1,105	0	-1,105	-100
<b>Total</b>	66,223	54,206	-12,017	-18.15

Source: MAAR, 2005

In order to support the control on private sector imports, MAAR issued the decision number 99/t, in 2004, that reports the executive instructions of the law no 18/2004, which refers to the trading, manufacturing, and distribution of both organic and chemical fertilizers, and plant growing hormones. Agricultural Affairs Department (AFD) with collaboration of the General Commission of The Agricultural Scientific Researches (GCASR) are both responsible to test and analyse the imported and locally produced fertilizers and give licenses to the importers.

The comparison of the total quantities of fertilizers provided by the ACB to farmers between 1997-2000 and 2001-2004 shows a decrease by 1.9% (Table 3.13). ACB provide farmers with fertilizer, through its branches distributed throughout the country at a prices lower than international ones.

**Table.3.13** Total fertilizer quantities provided by ACB, 1997-2004

Item	Average 1997-2000 (ton)	Average 2001-2004 (ton)	Difference (ton)	Growth Rate (%)
<b>Super Phosphate</b>	1,999	229,602	227,604	227.39
<b>Urea</b>	231,798	330,819	99,021	9.30
<b>Ammonium Nitrate 33.5%</b>	310,266	119,096	-191,171	-21.29
<b>Ammonium Nitrate 30%</b>	167,960	104,992	-62,968	-11.08
<b>Compound</b>	86,919	4,019	-82,900	-53.63
<b>Solphate Potassium</b>	8,607	16,794	8,187	18.19
<b>Total</b>	15,293	805,321	790,028	169.38

Source: AC, 2005

***Improved Seeds for Crops and Vegetables***

According to SAS orientation, GESM should be turned from an economic to a research establishment. However, until 2004 GESM still operates as an economic establishment providing improved seed to farmers. Table 3.14 shows the average total improved seed quantities over the reference period. For the main strategic crops as cotton and wheat, the total quantities decreased by 47% and 19% respectively. These declines resulted from the decreases in the required seed per hectare due to the adoption of high yield varieties and modern production techniques, and because farmers have been using seeds produced at their farms. In general except potato seeds, whose provision by GESM increased at the growth rate of 5% per year, all other crop seeds have tended to decrease.

**Table.3.14.** Total improved seed quantity provided by GESM, 1997-2004

Item	Average 1997-2000 (ton)	Average 2001-2004 (ton)	Difference (ton)	Growth Rate (%)	Increases (%)
<b>Cotton</b>	34,199.00	17,963.88	-16,235.13	-14.87	-47
<b>Wheat</b>	145,945.50	118,916.50	-27,029.00	-4.99	-19
<b>Barley</b>	12,203.00	1,745.75	-10,457.25	-38.50	-86
<b>Potato</b>	26,225.00	31,825.55	5,600.55	4.96	21
<b>Maize</b>	1,264.25	891.50	-372.75	-8.36	-29
<b>Bean</b>	248.25	194.63	-53.63	-5.90	-22
<b>Pea nut</b>	0.08	0	-0.08	-	-100
<b>Lentil</b>	1,898.50	568.63	-1,329.88	-26.02	-70
<b>Chick-peas</b>	747.75	255.38	-492.38	-23.55	-66
<b>Soy-bean</b>	237.04	43.37	-193.67	-34.60	-82
<b>Oil-Sun-flower</b>	17.13	6.61	-10.52	-21.19	-61
<b>Peas</b>	30.25	0	-30.25	-	-100

Source: GESM, 2005

***Healthy and certified high yield seedlings***

MAAR produces seedlings through its nurseries distributed throughout the country. Before the implementation of SAS, there were 36 of seedling nurseries throughout the country, while in 2004 they amounted to 69. These nurseries produce different types of fruit seedlings to meet the local needs, plus some quantity (usually around 5-10% of its production) for export.

### *3.1.2 B-Marketing and Processing Policies*

#### *3.1.2.1 B1-Pricing*

##### *Adopt appropriate pricing policies*

The SAS targeted to implement suitable pricing policies for strategic crops to insure the implementation of the agricultural plane as to acquire the required raw materials of the local industries and to insure the needs of local and foreign markets of these crops.

The pricing policies have incurred no salient changes after SAS implementation being the procurement price of strategic crops unchanged up to 2004. However, the price of cotton produced in unlicensed areas is not any more equal to the procurement price but only the world price. Moreover, the pricing of sugar-beet crop has started to be computed according to the sugar content, and the purchasing prices for barely, lentil, and chickpeas were changed. For non-strategic crops, there no changes in there pricing policies: fruit and vegetables marketed freely in local or wholesale markets.

#### *3.1.2.2 B2-Processing*

##### *Develop local rural Industry based on livestock products*

Livestock concentration areas have been identified as those areas where milk production exceeds the demand. According to the previous identification, a study with FAO cooperation has been conducted for establishing milk-gathering centers and marketing milk products and this study has been introduced to the State planning Commission (MAAR, 2005)

Farmers, especially in Al Badia, have been provided by loans for rural development from the Commission for Combating Unemployment (CCU), the ACB, and from various development projects conducted by MAAR (MAAR, 2005).

Aiming at enhancing the establishment of agro-processing industries in the production areas, it was issued the legislative decree number 7 of 3/7/2001 that amended the Investment Law number 10 of 4/5/1991. More especially, this legislative degree provides an additional two years period of exempted tax for agro-processing industries that will be established in Al-Raqqa, Al-Hassakeh and Deir-Ezzor Governorates. In 2004, the ACB provided 60% more loans than it did in the year 2003 (MAAR, 2005).

##### *Develop post harvest practices*

This action focuses on providing loans for installing, sorting, and grading lines. There are no specific data concerning packaging production loans.

However, the Industrial Bank provided the sector with SP 1,519 millions in 2001 and SP 1,528 in 2002<sup>12</sup> (Industrial Bank, 2005). In order to improve products quality and reduce lose and waste, refrigerated trucks were provided and its number increased from 1283 in 2000 to 1781 in 2004 (Ministry of Transportation, 2005).

##### *Good Packages*

In 1999, the Ministry of Industry issued the decree number 323 of 28/2/1999 that allowed the private sector to import all equipments required for sorting and waxing lines and to replace the previous old ones(MOE, 2005).

The ACB provided an average of 55% of the required new cotton bags during the years 1998, 1999, 2000, which increased up to 61% as an average of 2001, 2002, 2003, in addition to the old usable bags, (ACB, 2005).

#### *3.1.2.3 B3-Marketing*

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<sup>12</sup> Specific data for other years were not available.

Develop domestic marketing activities

The General Establishment of Fruit and Vegetable (GEFV) has been converted to The General Establishment for Marketing the Agricultural and Animal Products (GEMAAP), which acts the same role of GEFV in packing, sorting and marketing the agricultural products overall the country. GEMAAP has established good storing facilities, enough number of cooling and storage canners. At the same time, it facilitated the acquisition of modern transport means by providing cooling transportation means, in addition to the implementation of TIR agreement (on land transportation organization). GEMAAP has instituted its centre for packaging and sorting apples and another one for packing and sorting citrus products in Lattakia. However, up to 2004 there was no information about the existence of any marketing cooperatives (MAAR, 2005).

It is important to mention that the contribution of public sector is not enough and the opportunity for private sector intervenes is exist, especially in marketing fruit, vegetable, and animal products.

### *3.1.3 C-International Trade Policies*

#### *3.1.3.1 C1-International trade*

The international trade policies aimed at developing the quantity as the quality of the agricultural products and producing products that have comparative advantage in the foreign markets through the following actions.

#### *Export surplus of products that enjoy comparative advantages and enhance their competitiveness*

There was not any study about the requirements of foreign markets in terms of quantity and quality. Nevertheless, these requirements were taken into account through the bilateral agreements with the Arab and foreign countries; In addition to, the Syrian-European association.

The NAPC also started the comparative advantage study, which define crops and commodities that enjoy comparative advantages and their location in the country. The study indicates that tomato, fresh oranges, olive oil and pasta enjoy comparative advantages. Moreover, this process of studying selected commodities will continue in order to cover all important crops and agricultural commodities.

#### *Develop international marketing activities*

The GAFTA agreement prescribes to remove all non-tariff restrictions (protection measures, quantitative, monetary, administrative, technical, and organizational restrictions) among signing countries. In addition, the bilateral trade agreements with Egypt, Lebanon, Jordan, Saudi Arabia, United Arab of Emirates, and Sudan prescribes to remove restrictions (SAT, 2004).

Deferent export promotion measures have been adopted as the result of trade agreements including the Syrian-EU agreement that allows Syria exporters to export 45 thousand tons of citrus, 10 thousand tons of processed olive oil, 20 thousand tons of apple and 35 thousand tons of potato in addition to several kinds of agricultural products. All of the previous products are exempted from custom duties.

#### *Improve products quality and control loss and waste<sup>13</sup>*

There is no such new agency except the Exports Monitor Centre of the Ministry of Economic, which supposes to give certificates to exported commodities according to the following legislative laws:

1. legislative decree number 4194 dated on 28/6/1999 that olive oil products should be subjected to the exports monitor system

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<sup>13</sup> This title originally was "Develop the post harvest practices ...." (cf. IV.10b in annex 2): we changed the title in order to make it consistent with the content of the action.

2. legislative decree number 2779 dated on 15/6/1994 that the cotton, textile and cotton clothes products should be subjected to the exports monitor system

However, recently the work of these two decrees started slowing down through the following legislative decrees:

1. legislative decree number 563 dated on 10/3/2005, which dispenses the olive oil exports from exports monitor system for the main exporting companies;
2. legislative decree number 1379 dated on 13/6/2005, which stops the work of the legislative decree number 2779;

On the other side, the legislative decree number 1380 of 13/6/2005 comes to force the producers and exporters of all Syrian industrial products to put a label that shows the products' specifications. Indeed that could be a simple way to show the products' quality.

#### *Establish a market information system*

The project of Institutional and Sectoral Modernization Facility (ISMF), a cooperation project sponsored by the EU, has introduced a study in this regards. Where establishing a market information system is considered very important for producers and exporters to know about the requirements of external and internal markets, the prices, the time of demanding.

#### *3.1.4 D-Institutional Oriented Policies*

Under this title, all institutional oriented interventions grouped into four programmes: research, extension, training, and institution.

##### *3.1.4.1 D1-Research*

Policies related to Scientific Agriculture Research focus on developing the research approaches in different fields and on providing their required needs in terms of the establishment of new research centres as well as training the technical cadres. This has been achieved through the following objectives.

#### *GCSAR establishment*

The General Commission for Scientific Agricultural Research (GCSAR) was established and substituted for the Directorate of Scientific Agricultural Research by Law no. 42 of 2001. Its objectives are the organization and development of agricultural research.

A financial incentive system based on the ranking of published scientific work was adopted in order to attract researchers and motivate them. Moreover, all research position has been reshuffled and the staff has been assigned accordingly. The recent amendment included that some of previous departments to continue its research activities, and the other part to continue its service activities.

#### *Develop the agriculture research strategy*

The establishment of The GCSAR drafted a new strategy for modernizing and reconstructing the research programmes according to the scientific and modern research methods in all fields and priorities for the agricultural research were set to allow increasing the agricultural production by 30% at least by year 2020, improve its quality, decrease production cost and sustain agricultural resources. In order to implement the new strategy, a work plan was prepared with reference of the three sub-periods: 2003-2005, 2006-2010, 2011-2020 so that it can be monitored and reviewed periodically (GCSAR, 2004). An assessment of agricultural research carried in by the GCSAR during the period 1992-2003.

### Establish modern research centres

Research specialized centres for different areas of research were established, developed and provided by their requirement of labs and equipment. In 2005, the total number of research centres across the country amounted to 18 research centres, 52 stations, 48 research locations, 70 main labs, and 35 branch labs. In particular, it is noticeable the increase in the number of animal production research stations that have been established for poultry and Shami goats in Al Ghab area (Hama governorate), Al-Kameshli area (Al Hassakeh governorate), Jusy El Khrab (Homs governorate), and for Shami and Akshi cattle in Tal Shhab (Daraa governorate), and Shami goats only in Lattakia governorate. Research centres of buffalo and camel have been also improved lately.

### Develop genetic resource conservation process

The process of genetic resource development has been started. GCSAR prepared a degree draft for plant genetic resource conservation. New centres for mango, Loquats, and medical plants were established since 2001. In the year 2004, new centres of fruit trees and medical plants reached 50 (GCSAR, 2004).

### Training agricultural researchers

The researchers at GCSAR have been trained in order to follow up with updated research. Training courses were implemented upon requested by extension cadres. A large number of agronomists have been sent abroad for high education degrees, particularly, 108 for PhD and 30 for master in different specialization during the period 2000-2004 (Directorate of Training, 2005). Moreover, many other researchers have applied for postgraduate studies, namely, 58 diploma, 92 masters, and 22 doctoral degrees at national universities, and 14 masters and 39 doctoral degrees abroad. Finally, 327 of GCSAR researchers have been registered for technical training abroad.

#### *3.1.4.2 D2-Extension*

The Agricultural Extension aims at developing the production process through its important role of supplying farmers with the modern research technical results and successful experiences and contributing to solve their technical agricultural problems. Therefore, the agricultural extension focuses on training and rehabilitating its technical cadres.

### Train extension staff

Training courses are implemented according to specific annual plans. Ten specialized extension programmes have been implemented annually, including applying new technology and production methods for the main crops: wheat, cotton, sugar beet, maize, apple, citrus, olive, and pistachio. Cattle and sheep programmes have been already implemented at farm level and they are currently in the assessment stage. The number of implemented training courses for the technical staff accounted 761 in 2004, and 18,000 seminars and extension field days were implemented, 11,000 of which particularly devoted to rural women (Directorate of Training, 2005).

### Increase the number of extension units and supply them with the required inputs

In 2004, the number of workers in the extension units accounted for 3077 agricultural engineer, 605 veterinaries, 2207 agricultural observers, 4438 veterinary observers (Directorate of Agricultural Extension, 2005). (Table 3.15)

The number of extension units at country level totaled 1063 units in 2004, increasing by 15 units a year. Supporting the extension units with the required equipment shows a high implementing rate during last years, namely the actual execution rate of planned funds to by those facilities was 86%-99%. However, the existing units have not been provided with all the needed transport vehicles (i.e. at least one vehicle per unit) even after the budget allocated to the agricultural extension has been increased from 49 million SP in 2001 to 132 million SP in 2004 (Agricultural Extension Directorate, 2004).

**Table 3.15** The number of extension units and technical staff, 2000-2004

Items	2000	2004	Dif. 2004- 2000	Diff. per year	target	% achieve- ment
<b>No of extension units</b>	883	1063	180	45	15	300%
<b>Agronomist</b>	2703	3077	374	94		
<b>Agronomist assis- tant</b>	913	2207	1294	324		
<b>Veterinarian</b>	303	605	302	76		
<b>Veterinarian assis- tant</b>	2253	4438	2185	546		
<b>Total number of staff</b>	6172	10327	4155	1039		

Source: MAAR, the annual agricultural abstract

### 3.1.4.3 D3-Training

#### Develop training centers

The construction of the training halls in the agricultural directorates in all governorates was accomplished and provided with the furniture and technical equipments by the Training Directorate. In addition to that, the extension directorate has started building 6 new centres for training the students of vocational institutions in Damascus, Aleppo, Lattakia, Tartous, Raqqa and Deir-Ezzor.

#### Establish agricultural Institutions

One veterinary institute in Idleb governorate was established, and the building of 6 new high institutes has started. The Idleb institute as well as other six agricultural and veterinary institutes was provided with labs and some of required equipments (Directorate of Training, 2005).

### 3.1.4.4 D4-Institutional reform

Remarkable interest was given to the agricultural sector including government plan due to the importance of that sector in the comprehensive development process. In fact, the Syrian Agricultural Strategy Orientations have considered the importance of this sector through putting the policies and programs that activate and enhance the agricultural sector's contribution in the economic development process. The Syrian Agricultural Strategy has focused on increasing the agricultural investment through: involving the private sector in the production process, and give it the leading role in the production. While the Ministry of Agriculture adapt the research activity to provide the most updated techniques and the research results of that sector, which can work on progressed bases, at lowest costs, and providing the financial resources through the following:

Increase the agricultural investments allocated for service projects at an annual rate of 15% for research, education and extension and 10% for other projects

Identify the role of the private, public, cooperative, and joint sectors. In order to enhance the role of private, joint and cooperative sector in the agricultural investment, many procedures have been taken by the government, which have been mentioned previously, for example: the state's allowing to private sector to import all kind of fertilizers and increasing the contribution of the private sector beside the public sector in providing bags. In this context, the Ministry of Industry has issued in 1999 the decision no. 323 of 28/2/1999 that allows the private sector to import all the equipments required for packaging process (see chapter 3).

Modification the roles played by the economic establishments. A feasible study was conducted to many economic establishments; therefore; based on the findings of that study, many establishment have been canceled such as the General Establish-

ment of Agricultural Mechanization and State Farms, and then reallocate 90% of its land to the beneficiaries (farmers and some employees in the establishment), and keep 10%, (which included the Eight of March Farm in Rural Damascus, where the Economic Unites in Al-Sowieda and Al-Quoneitra are belonging to the first Establishment, while, the Abou Firas Al-Hamadani firm in Aleppo is belonging to the Al-Horriah Firm in Lattakia) as economic research establishments. In addition, the status of cow and fish Establishments is discussed currently to identify the optimal feature of its investment.

Fragmentation is currently under consideration at ministry level to define responsibilities among different bodies or integrate the ones involved in the same steps within the production process, e.g. the units of seed treatment, sugar plants, and dairy plants.

For reconsidering financial policies, recently, general orientations have witnessed some changes. So that loans rate decreased generally and there was no improvement for long and medium loans rate. Moreover, annual growth rate average of total loans' volume has decreased by 11.5% during 1997-2000 and 2001-2004. also, long and short term loans have decreased by 23.6% and 16.4% respectively, while medium term loans have decreased less than the previous ones 7.8% during the two periods mentioned (table 16.3). that decline is attributed to the farmer's inability in having new loans, because farmers unable to repay their previous loans due to drought from one side, and due to the emphasized checking of the purposes that loans are given for from another side.

In order to help farmers to overcome the effects of the drought, the ACB rescheduled the repayments (responding to law 57 of 2000) to be reimbursed in equal installments over 5 years with the first installment to be paid on 1/8/2003<sup>14</sup>. Interest rates started being applied on 1/1/2003 and they are equal to interest rates for the medium term loans. In addition, all overdue interests and deferral penalties were waived.

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<sup>14</sup> law no. 57 for year 2000

**Table.3.16** Average loans advanced by ACB 1997-2004 (Million SP)

	<b>Average 1997-2000</b>	<b>Average 2001-2004</b>	<b>Diff</b>	<b>Annual average growth rate %</b>	<b>% of Total</b>
<b>Long terms</b>	165,561.3	56,355.5	-109,206	-23.6%	1.0%
<b>Medium terms</b>	1,426,391	1,028,754	-397,638	-7.8%	18.3%
<b>Short terms</b>	9,321,207	4,543,324	-4,777,883	-16.4%	80.7%
<b>Total</b>	10,913,159	5,628,433	-5,284,726	-15.3%	100.0%

Source: CBS, 2005

### 3.1.5 *E-Natural Resources Conservation and Rural Development Policies*

These policies group all programmes that focuses either on natural resources (e.g. land, water, forests) or on rural development issues (e.g. Al-Badia, rural infrastructure).

#### 3.1.5.1 E1-Land

##### Optimal utilization and Crop rotation

An agricultural production plan is prepared annually, setting quantitative production targets for crops at village level. The agricultural plan indicates the crop rotations to be adopted for irrigated and rainfed agriculture and by agro climatic zone.

The preparation mechanism of the annual plan shifted from planning at crop level to planning at group level (cereals, legumes, fodder crops, etc), with remaining as possible at the defined percentage of strategic crops, so the farmer can chose what to plant and at the same time to get loans from the ACB.

##### Land reclamation

Reclamation of land has been undertaken by many development projects, with some success. However, there are some concerns related to the fact that not all required equipments for mechanical reclamation were available. Moreover, annual rate of reclamation was less than the targeted plan (33 thousand ha/year), though the comprehensive estimate of reclaimed land in mountainous and hilly areas is available, on average 22,709 hectare have been reclaimed over the period 2001-2004, and the area put under investment (Table, 3.17). The total area planted with fruit trees accounted 16.6 thousand hectares annually and 6.1 thousand hectare were invested annually with crops over the same period. Even in this case, the achievement is less than the target.

**Table 3.17** Average reclaimed land during the period 1997-2004

<b>Item</b>	<b>Average 1997- 2000 (ha)</b>	<b>Average 2001-2004 (ha)</b>	<b>Difference (ha)</b>	<b>Planned target (ha)</b>	<b>Difference (target vs. avr. 2001- 2004)</b>	<b>% achieved to planned</b>
<b>fruit</b>	24,549	16,588	-7,961	24,000	-7,412	69.1%
<b>crops</b>	3,287	6,121	2,834	9,000	-2,879	68.0%
<b>total</b>	27,837	22,709	-5,128	33,000	-10,291	68.8%

Source: MAAR, 2005.

#### 3.1.5.2 E2-Water

The demand of water resources for the agricultural needs changed between 2000 and 2004 from 13.7 to 15.5 million cubic meters. The total planned irrigated areas

for season 2004-2005 was estimated at 1.5 million hectare including summer and winter crops on all the water resources. (MAAR, Agriculture Plan, 2004-2005).

Expand the Area Irrigated and Improve the Efficiency of Public net work

The SAS included an expansion of the total irrigated areas on public schemes by 20 thousand hectares annually between 2001 and 2005 and improving irrigation efficiency on the public schemes by 20% in the period 2001-2003 and by 30% between 2004-2005.

Table 3.18 shows the development of the total irrigated area on public schemes between 1997-2000 and 2001-2004.

**Table 3.18** Development of surface irrigated areas 1997-2004

	source	Average 1997-2000 (ha)	Average 2001-2004 (ha)	Difference (ha)	Average Difference (ha)	Planned (ha/year)	% of achievement
<b>Irrigated Lands from surface</b>	<b>public net-work</b>	266,553	321,641	55,088	13,772	20,000	68.9%
	<b>rivers</b>	220,619	205,625	-14,993	-3,748		
<b>Total</b>		487,171	527,266	40,095	10,023.7		

MAAR, 2004

Comparing these two periods, we can see an increase of 55 thousand hectares that is 20.7% of the area before the SAS implementation. However, the average annual increase amounted at 13.7 thousand hectares whereas; the expected average annual increase should have been 20 thousand hectares that is the achievement rate of this target was around 68.9%. Moreover, water-use efficiency of public schemes didn't change since the SAS implementation, being constant around 50%. (MAAR, 2004)

Rationalize water use

The SAS aimed at rationalize water use through converting all the total irrigated areas to modern irrigation methods by 2005.

At the end of the year 2004, the irrigated area converted to modern irrigation amounted at 188 thousand hectares that is 13% of total irrigated area (Table 3.19). An achievement that falls short of the planned targets (a conversion rate of 50% by year 2003, and a 100% by year 2005). Despite this, it should be emphasized that the average growth rate of modernization was quite remarkable being 29.7% per year. As the result, an investment project was established (a fund for modern irrigation) with account of SP 22 billion during the tenth five-year plan.

**Table 3.19** The total modern irrigated land

year	irrigation type	2001	2004	differ	% modern to total %	Growth rate %
<b>Modern Irrigation Area</b>	<b>Sprinkle</b>	66,155	130,170	64,015.4	9.0	25.3
	<b>Drip</b>	44,154	57,487	13,332.7	4.0	9.2
	<b>Total</b>	110,309	187,657	77,348.1	13.0	29.7
<b>total irrigated area</b>		1,266,889	1,439,134			

MAAR, 2004

Adopting modern irrigation technologies has led to save an average of 30-40% of the water requirements of the crops with increasing their revenue by 30% higher than the crops with traditional irrigation.

### 3.1.5.3 *E3-Forests*

The government has stressed the objective of forest protection through a set of policies and procedures, such as reclaiming new areas and reforesting them, producing forest seedlings. In particular, procedures and regulations for establishing forest roads and fire lines, training the forest policemen and provide all the needed equipment to fight and fully control fires. Moreover, the technological equipment improvement of combating forest fires has helped reduce the area deforested by fires during the period 2000-2004 if compared to the past ten years. Consequently, up to the end of 2004, the total forest area reached 585 thousands hectares increasing annually by 1.8% increase during the period 2001-2004. However, the strategy planned to have an annual increase of 4-5% in the forest area.

**Table 3.20** Forests Area Development 1997-2004

item	Average 1997-2000 (ha)	Average. 2001-2004 (ha)	Difference (ha)	Achieved growth rate %	Planned growth rate %	Difference in growth rate
forest areas	659,722	688,832	29,110	1.09	4 to 5	-3.91 to -2.91

Source: NAPC database

### 3.1.5.4 *E4-Al Badia*

#### *Rural development in Al Badia*

Al Badia Directorate of MAAR has been running many vital projects aiming at developing the natural pastures, protecting the vegetation cover, and organizing grazing on natural steppes in the Syrian Al Badia. In this regard, it usually collects the pastoral seeds and seedlings from the thirteen seedling producing centres all over the country and from the main centres that exist in Al Badia. Table 3.21: represents what has been achieved during 2001-2004 compared with the planned targets. The area of pastoral reservoirs was less than the planed, and reached 46.1%, the same for pastoral seedlings (only 75.8% of planned targets). However, the pastoral seeds exceeded the planned target by 10 tons yearly. The number of wells amounted 239 by the end of 2004.

Item	Average achieved 2001-2004	Target	Diff.	% Achievement
Area of Pastoral reservoirs (1,000 ha)	138.25			
Pastoral seedlings (million)	11.375	15.0	- 3.625	75.8%
Area of pastoral seeds (1,000 ha)	19.25			
Produced pastoral seeds (1,000 ton)	90.5	80.0	10.5	113.1%
Ready Wells (number)	239*			

Moreover, the increase in the pastoral reservoirs led to increase the population of wild animals, such as the deer whose total number accounted to 980 heads 400 of which in Talila, 120 in Aleppo, 460 in Jabal Abd El Aziz; and the Maha (desert deer) which amounted to 71 heads in Talila. These reservoirs are being rented to the herders who live around and enjoy property rights to traditionally graze during two periods of the year (October to December, and from February to March) at grazing fees of 150 SP/hectare in condition of grazing density of 3 heads/hectare.

In the field of improving the financing process, the cooperatives offer sometimes in-kind feed loans financed by the Agricultural Cooperative Bank (ACB) at encouraging prices.

Moreover, The Directorate has also provided 384 courses to fight illiteracy followed by 7828 persons out of which 5336 were women. Many other initiatives were added like small income generating projects and food processing activities.

### 3.1.5.5 E5-Infrastructures

#### Establish the Required Infrastructure to Provide the Product and Input Transport and other Facilities

The SAS programs up to 2005 include increasing the agricultural roads investments and continuing the development of other services and information systems. The percentage of executed agricultural roads reached 116% achieving an average increase of 168 Km over the planned target, serving 52% of the planned area (Table 3.22).

**Table. 3.22:** Agriculture roads 200-2004

	<b>Ave. 2001-2004</b>	<b>target</b>	<b>Diff</b>	<b>%</b>
Executed length K.M/year	1168.25	1000.0	168.25	116%
Service Area 1000 ha/year	104.25	200.0	-95.75	51.8%

source: MAAR,2004

However, by 2004 the ministry of real estate became responsible of executing the agricultural roads, which was under responsibility of MAAR.

## 3.2 Summary of SAS Assessment

Table 4.1 includes a summary assessment of SAS implementation of policies as well as programs. From a general perspective, we can conclude as following.

- Plant Production policies achieved the planned targets. On the other side, animal production objectives didn't reach the planned growth rates (red meat, fish, and milk).
- Marketing policies almost realized, but agro-marketing process is still slow (need more focus to produce suitable export surplus).
- International trade policies are almost tolerable, but attention to quality.
- Institutional oriented policies need more efforts to be improved (improve training, establish institutions and provide it with requirement).

Natural resource and rural development should be improved (adopt suitable crop rotation, increase the rate of modernizing irrigation, increase the efficiency of public nets, increase forestation rate, increase the vegetation cover, establish whole sale markets in rural areas)

**Table 4.1.** Assessment of policies and programs of the SAS

<b>Policies</b>	<b>Programs</b>	<b>Assessment</b>
A – Production Oriented	A.1 – Plant production	++
	A.2 – Livestock production	=/-
	A.3 – Inputs	=
B – Marketing and Processing	B.1 – Pricing	=
	B.2 – Processing	=/-
	B.3 – Marketing	=
C – International Trade	C.1 – International trade	=/-
D – Institutional Oriented	D.1 – Research	=
	D.2 – Extension	+/=
	D.3 – Training	-
	D.4 – Institutions	--
E – Natural Resources Conservation and Rural Development	E.1 – Land	-
	E.2 – Water	-
	E.3 – Forests	-
	E.4 – Al Badia	=/-
	E.5 – Infrastructures	=/-

Assessment Scale: ++ Achievement beyond expectations; + Over-achievement; = Achievement to expectations;

- Achievement below expectations; -- Achievement far below expectations.

## **Part II. Revision**

The sixth five-years-plan (1986 – 1990) marked the initiation of the process of shifting the Syrian economy towards indicative planning, adopting the participatory and decentralized approach, liberalizing some production inputs and changing pricing policies related to most of agricultural crops. The pricing policies are currently applicable only for main strategic crops such as wheat, cotton, barley, chickpeas, lentil, sugar beet, and tobacco, whereas the market of barley, chickpeas, and lentils was further liberalized.

The government also allowed the private sector to actively play its role in the production and development process by giving it the opportunities to import some inputs like fertilizers, pesticides, veterinary medicine ...etc. Moreover, while the State retained a central role in the resource allocation, space was gradually opened for private sector in agricultural production and trade.

During last decades, the objectives of the agricultural sector focused on increasing production, which resulted in exploiting the natural resources (water and soil) as well as the degradation of both agricultural land and pastorals in Al-Badia) and producing a surplus of agricultural production without ensured new marketing widows. This created an additional burden on the government budget. In this case, more efforts are required to promote the marketing performance and to increase the agricultural return.

The current economic and political changes such as the move towards social market economy, the liberalization of the markets of agricultural inputs and products, the conclusion of trade agreements such as Great Arab Free Trade Area (GAFTA) and the Syrian-European association, the signature of regional trade agreement with both Arab and foreign countries, and the attempt of joining the World Trade Organization (WTO); imply the need for reconsidering the current agricultural policies, creating an economic environment suitable for those changes, and producing agricultural commodities that can meet both in the internal and external markets as well as the new commitments. In addition, improving the income level of rural population as well as the standard living of producers should be considered.

Within this framework, there is a need to reconsider the Orientation of the Syria Agricultural Strategy focusing on the production process, in which the production factors and natural resources should be used effectively. Furthermore, it seems appropriate to distinguish between the internal and external factors and forces that affect the economic environment as each of them has its own characteristics.

Within the globalization and liberalization process, two important trends are affecting the agricultural markets and determining the general trend of agricultural strategy:

- The increasing supply of subsidized agricultural products in the world markets that leads, consequently, to the price decline on the short term. Therefore, production decisions should be based on the comparative advantage and cost effectiveness to face the global conditions.
- The improvement of the value added by means of enhancing the agro-processing activities and adopting the international standards.

The internal factors that have to be taken into account can be defined as follows.

- Environmental sustainability: there is an inverse proportion between the agricultural practices, natural resources (water, land, forests, pastorals), and environment. Accordingly, alternative policies must be the most important components of the future agricultural strategy to guarantee the sustainable use of natural resources.
- Demographic factors: the high population growth rate, particularly in rural areas, is creating a situation characterized by a substantial modification in the age

profile of the population and increasing the labour force. Hence improving infrastructure, promoting investments, and diversifying income resources must receive due attention in order to create new opportunities for rural population, and enable the agricultural sector to balance between rural and urban employment.

- Financial factors: They are related to the type and size of government expenditure devoted to agricultural and the volume of subsidies offered to some agricultural products. Subsidies should be compatible with the rules and regulations of the WTO as well as the policies adopted by other countries. Moreover, they should maintain the objective of enhancing quantity as well as the quality of the agricultural products. Accordingly, the definition of financial constraints is considered as an important step to modify the agricultural strategy within the framework of overall economic context.
- Institutional factors: the new structure of MAAR and the other bodies related to the agricultural sector must comply with the state development role within the new context of social market economy. On another hand, there must be a decrease in the number of the agricultural decision making bodies.

In the light of previous argument and depending on the results of the mid terms assessment of the agricultural sector performance , it is possible to summarize the actions that can be applied to activate the role of this sector in the social and economic development process aiming at achieving the general economic and social goals defined in the SAS. Furthermore, it could be possible to order the priorities within a group of proper practices required to achieve each goal. These applications are related to the following:

- Natural resources
- Plant production
- Animal production
- Production inputs
- Supporting services
- Agricultural policies

It is worth mentioning here that this chapter focuses on the programmes included in the strategy documents that have not been properly pursued. This was achieved by monitoring the implementation of the planned actions and proposing the actions to be taken into account in the future strategy based on the following: The results of monitoring the agricultural strategy published by MAAR in 2004

- The results of the analysis and assessment of the performance of different related sectors depending on the quantitative and qualitative analysis of the data up 2004
- The work plan proposed by various department of the MAAR
- The suggestions of stakeholders of the MAAR

The mid term review of the Agricultural Strategy 2001-2005 is considered as one of the instruments adopted to analyze and assess the performance of the agricultural sector, highlight the weakness and strengths of the agricultural strategy, conclude some insights based to modify the planned targets and programmes of strategy 2006-2010 in order to realize the required development depending on a scientific programmed base of the agricultural sector during the coming period. These modifications in the planned targets in addition to the new actions are presented in the followed matrix.

Within this matrix, all actions that already stated in the SAS were confirmed, except for some that seems to be too ambitious: e.g. reforestation rate, rate of conversion to

modern irrigation, Al Badia protection area, focusing on the policies that are lagging behind, taking into account the following points:

1. Institutional oriented: especially institutional reform and training
2. Natural resources and rural development: especially land, water and infrastructures
3. Marketing and international trade: especially quality.

**The Review of SAS Achievements Up To 2005, Amendments and Suggestions of the Revision Up To 2010**

PROGRAM	ACTIONS 2001-2005	ACTIONS 2006-2010
1. PLANT PRODUCTION		
- <b>Increasing the irrigated and rainfed crop productivity</b>	<ul style="list-style-type: none"> <li>• <b>Increase the irrigated yields by 3-5% and rain fed yields by 1%</b></li> <li>• <b>Consider the possibility to adopt new crops in the environmentally appropriate areas</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Increase the rainfed crop yield by 2%</b></li> <li>• <b>Increase the irrigated crop yield by 2%</b></li> <li>• <b>Increase cotton productivity by 1%</b></li> <li>• <b>Increase wheat productivity by 2%</b></li> </ul>
- <i>Improving crop productivity</i>		<ul style="list-style-type: none"> <li>• <i>Encourage farmer to develop the agricultural operations and practices</i></li> <li>• <i>Develop the supplementary irrigation</i></li> <li>• <i>Apply the appropriate crop rotation system</i></li> <li>• <i>Comply with crop cultivation time</i></li> <li>• <i>Adopt high yield crop cultivation</i></li> </ul>
- <i>Start adopting the organic farming</i>		<ul style="list-style-type: none"> <li>• <i>Adopt the organic farming after conducting the relevant studies</i></li> <li>• <i>Set up a working group with all stakeholders (Ministries, Peasant Union, Chambers of Agriculture, Universities, etc...)</i></li> <li>• <i>Set up a certification body in cooperation with an experienced certification body already acting</i></li> <li>• <i>Set up an integrated project (legislation, research, extension, etc...)</i></li> <li>• <i>Start an educational campaign for consumers in order to ferment a domestic market as can be found in the biggest towns all around the Mediterranean Sea</i></li> <li>• <i>Start establishing a cooperatives and commissions to control the organic productions to be consistence with the rule and criteria fixed by EU that included in the law dated 1991 and</i></li> </ul>

		<i>its amendments in 2000 (this law includes rules, rules of registration, monitoring, and certifications issue)</i>
- <b>Meeting the requirement of agro food and manufacturing industry</b>	<ul style="list-style-type: none"> <li>• <b>provide the agricultural raw materials required by the domestic</b></li> <li>• <b>Coordination with the processors to select the most appropriate varieties</b></li> <li>• <b>Plant new industrial varieties</b></li> <li>• <b>Improve rural industries</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Provide the agricultural raw materials required by the domestic industry</b></li> <li>• <i>Coordination with the processors to select the most appropriate varieties and to issue a contracts between producers and processors to select crops that meet the local industries</i></li> <li>• <i>Encourage the investment and promote the industry in the rural area</i></li> </ul>
- <b>Reduce the cost of production through the adoption of modern technologies and planting high yield varieties that are adaptable to the local environment</b>	<ul style="list-style-type: none"> <li>• <b>determine the investment requirements for applying modern technology on agriculture</b></li> <li>• <b>Provide high yield varieties to increase yields and reduce cost.</b></li> <li>• <b>Develop the technology applied on agriculture in terms of machines, high yield varieties,</b></li> <li>• <b>reduced lose and waste</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Continue obtaining a new high yield varieties adaptable to the local environment</b></li> <li>• <i>expand the planting of high yield varieties which has been introduced by the executed researches in the researches centres either by obtaining or by introducing a new varieties</i></li> <li>• <i>Adopt the new technologies to implement the agricultural operations and mechanize all pre and post harvest practices</i></li> </ul>
- <b>Biological control</b>	<ul style="list-style-type: none"> <li>• <b>Improve the agricultural quarantine centers</b></li> <li>• <b>Develop the post entry quarantine and establish isolation gardens</b></li> <li>• <b>improve the seed lab and establish a diagnostic lab</b></li> <li>• <b>Enhance the air control unit capacities and support it with 25 airplanes</b></li> <li>• <b>Improve the biological control</b></li> <li>• <b>Establish chemicals analysis labs</b></li> <li>• <b>Apply biological control on the main crops and trees</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Popularize the safe pesticide usage if the biological control doesn't exist</b></li> <li>• <b>Improve efficiency of existing labs to certificate agricultural products for international markets</b></li> <li>• <i>Expand the biological control to comprise most of field crops and fruit trees and adopt the integrated control programme by using the environmental methods to reduce damage rate in the field below the economic damage threshold</i></li> <li>• <i>Adopt the national project to develop the biological control</i></li> <li>• <i>Obtain a new natural enemies for most</i></li> </ul>

		<p><i>diseases and pests</i></p> <ul style="list-style-type: none"> <li>• <i>Establish integral laboratory to carry out all toxic effects examination on plant, animal, and environment for any new composite</i></li> <li>• <i>Accelerate providing all isolation centres with equipment and link it with the centre by <b>wide area network (WAN)</b></i></li> <li>• <i>Adjust the agricultural isolation law according to international criteria and international plant protection convention (IPPC) agreement</i></li> <li>• <i>Speed up the establishing of post entry quarantine and establish isolation gardens</i></li> <li>• <i>Increase the number of seed and diagnose labs</i></li> <li>• <i>Establish integral central laboratory to diagnose diseases, pests, and nematode and provide it with all equipments</i></li> <li>• <i>enhance the air control unit capacities and support it with 25 airplanes, which was supposed to be purchased during the period 2001-2005</i></li> </ul>
<b>2. LIVESTOCK PRODUCTION</b>		
- <b>Increase the artificial insemination and provide its requirements</b>	<ul style="list-style-type: none"> <li>• <b>Adopt the artificial insemination on a wide scale and identify the advantages and disadvantages and design the future work plan</b></li> <li>• <b>Improve the work mechanism and increase the artificial inseminations by 10 %/year and introduce new livestock species</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>expand the artificial insemination according to cattle increases and increase the improved births by 20%</b></li> <li>• <i>apply the artificial insemination to comprise sheep and goats</i></li> </ul>
- <b>Expand the genetic improvement of local races</b>	<ul style="list-style-type: none"> <li>• <b>Assess the previous work and set the technical conditions for expansion and improvement</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Study the status and set up the mechanism suitable to improving process and exclude weakly productive races</b></li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Establish stations for the multiplication of improved livestock semen and disseminate improved races</b></li> <li>• <b>Increase the improved cattle by 10% a year and provide its requirements</b></li> <li>• <b>Maintain the process of the establishment of stations for the multiplication of improved livestock semen and disseminate improved races</b></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Increase the number of improved cattle by 6% a year and exclude all the low yield animals.</i></li> <li>• <i>increase the number of improved meat-cattle and continue maintain the growth rate of number of milk-cattle</i></li> <li>• <i>increase the number of Al-Shami goat and prevent its decreasing</i></li> <li>• <i>Maintain the process of the establishment of stations for the multiplication of improved livestock semen and disseminate improved races</i></li> <li>• <i>Enable cattle breeders for ensuring their animals to alleviate the risk of death</i></li> </ul>
<p>- <b>Increase and improve the local production of vaccines to cover the local demand and export the surplus</b></p>	<ul style="list-style-type: none"> <li>• <b>Assess the vaccine demand and identify the locally produced types; and establish a firm to produce the imported vaccines</b></li> <li>• <b>Expand the vaccines production and start the production of new vaccines with the aim of covering 50% of the total demand at least</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Increase the local vaccine production and improve its quality for exportation</b></li> <li>• <i>Establish a factory producing food and mouth vaccine in order to reduce the export quantity</i></li> <li>• <i>Develop and improve the bacteria and virus vaccine production</i></li> <li>• <i>Produce the vital duality and trio poultry vaccines</i></li> <li>• <i>Open branches for Saidala establishment throughout all governorates to sale poultry vaccines in order to be properly distributed to breeders with less cost</i></li> </ul>
<p>- <b>Adopt improved programs to find animal diseases</b></p>	<ul style="list-style-type: none"> <li>• <b>Introduce new methods</b></li> <li>• <b>Start using the new methods to remedy it at suitable time</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Apply new and integrated methods</b></li> </ul>
<p>- <b>locally produced high quality veterinary medicines</b></p>	<ul style="list-style-type: none"> <li>• <b>Adopt the proper mechanism for the development of local medicine production</b></li> <li>• <b>Promote the private sector activity in medicine production and exempt their inputs from taxes and fees</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Secure the needs of veterinary medicines of international standards</b></li> <li>• <b>Improve produced medicines monitoring to insure quality</b></li> <li>• <i>Encourage private sector to produce veterinary medicines locally and eliminate all</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Increase local production by 10%/year</b></li> <li>• <b>Increase different types of locally produced medicines by 15% yearly</b></li> </ul>	<p><i>production taxes</i></p> <ul style="list-style-type: none"> <li>• <i>Increase locally produced types by 15% per year</i></li> </ul>
- <b>Increase the livestock production</b>	<ul style="list-style-type: none"> <li>• <b>Increase red meat production by 5%</b></li> <li>• <b>Increase white meat production by 5%</b></li> <li>• <b>Increase milk production by 4%</b></li> <li>• <b>Encourage investments in rural areas for processing livestock production to get benefits from value added</b></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Increase the red meat by 5% and white meat by 8%</i></li> <li>• <i>Increase milk production by 5%</i></li> <li>• <i>Encourage the investment in rural areas to process the livestock production benefiting from value add</i></li> </ul>
- <b>Increase fishes and poultries production</b>	<ul style="list-style-type: none"> <li>• <b>There wasn't any action for this program during 2001-2005</b></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Conduct studies and surveys and provide technical and financial support to fisheries</i></li> <li>• <i>Increase the fish production by 6% to meet local demand and to export the surplus</i></li> <li>• <i>Ensure suitable fodder at reasonable prices</i></li> <li>• <i>Train a technical staff able to implement the fish propagation and fish transplant operations</i></li> <li>• <i>Provide the poultry vaccines and medical care at reasonable prices</i></li> <li>• <i>Support the control on fodder and ensure the voidance of hormones</i></li> <li>• <i>Eliminate the income tax that applied lately on poultry holders</i></li> <li>• <i>Support the monitoring system on poultry establishment and comply with the technical and health conditions</i></li> </ul>
<b>PRODUCTION INPUTS</b>		
- <b>Provide the chemical fertilizers at reasonable prices and on timely</b>	<ul style="list-style-type: none"> <li>• <b>assess the experience of private sector import of fertilizers in addition</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Maintain the control and supervision role of the government</b></li> </ul>

<p><b>manners and eliminating the intermediate part of the marketing chain</b></p>	<p><b>to the public sector and define the optimal method that reduces costs and provides good quality products</b></p> <ul style="list-style-type: none"> <li>• <b>start the elimination of intermediaries</b></li> <li>• <b>support the control on private sector imports</b></li> <li>• <b>Develop the local production of good quality fertilizers to meet the local demand</b></li> <li>• <b>Adopt the proper ways to provide various varieties of fertilizers of good quality with ensuring stable prices and market balance</b></li> <li>• <b>Improve local production to compete imported fertilizers</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Start the elimination of intermediaries</b></li> <li>• <b>Improve the local fertilizer products</b></li> </ul>
<p><b>- Provide improved seeds of crops and vegetables</b></p>	<ul style="list-style-type: none"> <li>• <b>support the General Establishment for Seed Multiplication and modify its establishment decree from an economic to a research establishment</b></li> <li>• <b>produce the vegetables seeds like potato seeds and others</b></li> <li>• <b>continue the production of vegetables seeds like potato seeds and others</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>continue the production of improved vegetables and crops seeds</b></li> </ul>
<p><b>- Provide healthy and certified high yield seedlings in order to meet the requirements of the international markets</b></p>	<ul style="list-style-type: none"> <li>• <b>establish new public nurseries to produce healthy seedlings</b></li> <li>• <b>reduce the period taken for newly introduced varieties testing</b></li> <li>• <b>Introduce adaptable new varieties.</b></li> <li>• <b>Continue the introduction of adaptable new varieties</b></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Improve introducing process for new varieties and species aiming to achieve high quality production Increase the number of nurseries</i></li> <li>• <i>Introduce adaptable new varieties characterized by diseases and pests resistance and high productivity</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Support the product quality control</b></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Develop the quarantine centers to ensure healthy introduced seedlings</i></li> <li>• <i>Produce surpluses of healthy seedling for exportation</i></li> </ul>
<b>PRICING POLICIES</b>		
<ul style="list-style-type: none"> <li>- <b>Adopt an appropriate pricing policies</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Reduce the priced crops and restrict the pricing to wheat (which is the main food staple) and other crops process by the public plants (cotton, sugar beet and tobacco);</b></li> <li>- <b>Price alternative crops to encourage farmers to produce them</b></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Adopt new pricing mechanisms with the consistence of international prices and introduce independent support to not distort prices</i></li> <li>• <b>Continue restricting the pricing of agricultural commodities to be subject to market forces (supply and demand) consisting with general trade liberalization</b></li> </ul>
<b>PROCESSING POLICIES</b>		
<ul style="list-style-type: none"> <li>- <b>develop local rural industries for livestock production</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>identify the livestock concentration areas and determine the quantity produced, specially in terms of milk</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Continuing the executed programmes in the first two stages and encouraging establishing new centres for collecting the produces milk</b></li> </ul>
	<ul style="list-style-type: none"> <li>- <b>Provide producers with the required loans in the production areas with the aim of improving rural industries</b></li> </ul>	<ul style="list-style-type: none"> <li>- <i>Developing the providing loans mechanisms aiming at encouraging rural industries and generalizing the generating income project</i></li> </ul>
	<ul style="list-style-type: none"> <li>- <b>Enhance the agro processing establishments in the production areas</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Developing the local rural industries to cover the whole market demand and improving those products' quality. Providing the rural industries by required loans from the ACB in order to complete the post-harvesting operations</b></li> </ul>
<ul style="list-style-type: none"> <li>- <b>Develop the post harvest practices to improve products quality and reduce loose and waste</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Provide the required loans for the establishment pack houses and install grading and sorting lines</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>achieving producing high quality products and packaging it according to the foreign markets requirements</b></li> <li>- <b>enhance the ability of private, cooperative, and joined sectors to establish developed marketing agencies</b></li> </ul>

		- <i>Expand the loaning process and the possibility of obtaining it for establishing packaging centers</i>
- <b>Improve bags quality to preserve production in a suitable way</b>	- <b>Allow private sector to import and produce all types of packages</b>	- <i>Encouraging the local industries to import the bags according to the desired form in external markets</i>
	- <b>Provide the public establishments with 50% of the required bags to ensure price stability, and by 25% to avoid shortage</b>	- <b>The gradual decrease of offering bags by the government institutions and create the competitiveness between producers and importers to achieve best prices of the best products</b>
IMPROVE DOMESTIC AND INTERNATIONAL MARKETING		
- <b>Domestic marketing</b>	- <b>Establish marketing cooperatives</b>	- <b>Increasing marketing activity to enable it to serve marketing process similarly as in the developed countries and encouraging establishment of specialized cooperatives and commissions for producers and exporters</b>
	- <b>Establish cold storage facilities</b>	- <i>Establishing the storage and refrigerating centres taking into account its capacity to absorb the increasing agricultural production of some products (e.g. citrus) and regionally allocate it according to the production areas</i>
	- <b>Facilitate modern transport means acquisition</b> - <b>Secure refrigerated trucks</b>	- <i>Offering the proper transportation of agricultural products in suitable way and at the suitable time according to its characteristics (inability of controlling the time of harvesting and marketing, vulnerability to the weather conditions and the special conditions of storage);</i> - <i>offering modern and specialized transportation refrigerators according to the products' type and facilitating the offering operations</i>
	- <b>Assess the role played by the</b>	- <i>Reform and enlarge the working scale of the</i>

	<b>General Company for Fruit and Vegetables and start implementing the proposed suggestions of related study</b>	<i>General Establishment of Marketing and storing the Animal and Plant Products</i>
<b>- International marketing</b>	<b>- Consider the requirements of foreign markets in terms of quantity, quality and marketing windows</b>	<i>- Continuing studying the external markets and considering new ones with respect to their needs and entrusting the relevant bodies (embassies and commercial attaché) to study those markets to help local producers and exporters</i>
	<b>- Select the most appropriate areas for the production of export crops and carry out experiments to introduce the required crops</b>	<b>- Increasing the number of exporting varieties and producing them so as to have the required competitiveness</b>
	<b>- Establish a market information system to provide producers and exporters with the required information on the foreign markets prices, qualities and marketing windows</b>	<b>- Establishing the marketing information system that provide the Syrian producers and exporters with the prices and the time of needing it in the global market under trade liberalization system and the future Syrian merging into that system</b>
	<b>- Remove export restrictions</b>	<b>- Enable the private system to ply its role in marketing operation and entering the foreign markets</b>
	<b>- Adopt the export promotion measures</b>	<i>- Continuing activating mechanisms that encourage exports and creating additional mechanisms consistence with trade liberalization conditions and other countries mechanisms</i>
	<b>- Identify the control agency and establish labs that give quality certificates to producers</b>	<i>- Establish the proper monitoring system that considers facilitating the required procedures of provide the origin certificates and encourage exports as maintaining the Syrian export reputation. In addition to establish a commission for activate exports</i>

	<ul style="list-style-type: none"> <li>- <b>Remove all types of taxes and fees on exported agricultural products</b></li> </ul>	<ul style="list-style-type: none"> <li>- <i>Continuing removing the taxes and fees that restrict the exporting ability</i></li> </ul>
<b>INSTITUTIONAL POLICIES</b>		
<ul style="list-style-type: none"> <li>- <b>Develop a strategy for the scientific research and reconstructing the research programmes according to developed methods in all fields.</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Assess the current situation of the agricultural research and defining weaknesses and strengthens and future picture.</b></li> <li>- <b>Put a well defined strategy for the scientific research and reconstructing the research fields according to priorities.</b></li> <li>- <b>Put the implementing programmes for the strategy with vertical and horizontal expansion</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Continue developing research works to use the developed ones like genetic engineering and culture tissues</b></li> <li>- <b>Continue setting up executive programmes for the strategy with vertical and horizontal expansion</b></li> </ul>
<ul style="list-style-type: none"> <li>- <b>Establish developed research centres for different research and provide its requirements</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Quantify requirements of different areas for specialized and developed research centres, according to their different types of production and activities.</b></li> <li>- <b>Start use the specialized research centres for crops, fruit, vegetables, green-house crops, animal production research, irrigation research, and land research.</b></li> <li>- <b>Develop the stations of animal production research (sheep, cattle, and goat)</b></li> <li>- <b>Develop and expand specialized research centers to cover all plant and livestock production domains</b></li> <li>- <b>Establish research stations connected with specialized centers</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Continue establishing specialized and developed research centres to cover plant and animal production.</b></li> <li>- <b>Continue establishing stations connected to the centres.</b></li> <li>- <i>Adjust the mechanism of quickly adoption new varieties that meet the foreign markets demand</i></li> </ul>
<ul style="list-style-type: none"> <li>- <b>Develop the mechanism of genetic assets reserves</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Develop and enlarge all locations of genetic assets reserves.</b></li> <li>- <b>Establish new genetic centres to</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Reserving all genetic assets according to modern scientific methods</b></li> </ul>

	<b>cover all assets.</b>	
- <b>Organize and develop the agricultural research and issue the Decree of establishing the General Commission for Scientific and Agricultural Research (GCSAR) to encourage the researchers to work and benefiting from experience of research</b>	<ul style="list-style-type: none"> <li>- <b>Issue the Decree of establishing the General Commission for Scientific and Agricultural Research (GCSAR)</b></li> <li>- <b>Restructure the work force at the GCSAR.</b></li> <li>- <b>Attract qualified researchers at all levels</b></li> <li>- <b>Develop the research work of genetic engineering and culture tissues</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Continue support and encourage the scientific agricultural researchers in order to raise the level of agricultural production and to attract researchers</b></li> <li>- <i>Encourage and support research and researchers</i></li> <li>- <i>Develop researches of genetic engineering and culture tissues</i></li> </ul>
- <b>Train the agricultural researchers</b>	<ul style="list-style-type: none"> <li>- <b>Study the requirements of the agricultural sector in terms qualified staff and securing fellowships for 25 beneficiaries/year</b></li> <li>- <b>Conclude cooperation agreements with research centers to ensure the sustainability of post graduate and other types of external training</b></li> <li>- <b>Enhance post graduate external training</b></li> <li>- <b>Increase foreign training opportunities to 50/year or import training consultants to give training courses</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Continue increasing the number of fellowships to get high certificates and increase the number of external training</b></li> <li>- <b>Increase foreign training opportunities to 50/year or import training consultants to give training courses</b></li> </ul>
- <b>train agricultural engineers and help them implement the extension research programs</b>	<ul style="list-style-type: none"> <li>- <b>Design specialized extension programs on the crop level Provide the required inputs to develop these programs and enhance interaction with producers</b></li> <li>- <b>Organize training courses for extension agents and provide them with reasonable incentives</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Enhance the relationships between extension and research through acknowledging any new and transferring research results to producers and solve their problems</b></li> </ul>
- <b>increase the number of extension units and supply them with the required</b>	<ul style="list-style-type: none"> <li>▪ <b>Support the extension units with extension agents, transport</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>increase the number of extension units only by 10 units/year and focusing on</b></li> </ul>

<b>inputs</b>	<b>means and other equipment</b> <ul style="list-style-type: none"> <li>▪ Increase the number of extension units by 15/year up to 2003 and 10 units/year, and Provide the equipment needed (projectors, TVs, videos, etc); and supply each unit with one vehicle at least</li> </ul>	<b>supply them with the required inputs for previously established units</b> <ul style="list-style-type: none"> <li>- organize work to cover all requirements of plant and livestock production</li> </ul>
<ul style="list-style-type: none"> <li>- <b>Develop the training centers and provide them with the required equipment and establish modern training centers in the rural areas</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Provide the required equipment to the training centers in Damascus, Dar' a, Homs such as new teaching classes and services (study rooms, restaurants, lodging, and audio visual aids).</b></li> <li>- <b>Establish specialized training center in main production areas</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Increase the number of specialized centers to ensure requirements</b></li> </ul>
<ul style="list-style-type: none"> <li>- <b>Establish agricultural high schools and institutes and support them with the required labs and audio visual aids</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Establish three intermediate institutes</b></li> <li>- <b>Establish six high institutes</b></li> <li>- <b>establish 2 high institutes form different specialization to give 3 years training courses</b></li> <li>- <b>Establish 10 labs up to 2003 and 15 up to 2005 for the institutes and high schools and in addition to the required audio visual aids</b></li> <li>- <b>Provide a vehicle to transport the trainees from and to the schools and to the training fields</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Establish three new intermediate institutes</b></li> <li>- <b>Establish five new high institutes</b></li> <li>- <b>Establish 15 labs for the institutes and high schools in addition to the required audio visual aids</b></li> <li>- <i>Completion of establishing the three high institutes</i></li> <li>- <i>Provide one vehicle at least to every institute</i></li> </ul>
<b>STITUTIONS</b>		
<ul style="list-style-type: none"> <li>- <b>Give priority to the agricultural sector compare to other sectors and increase the investments</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Increase the agricultural investments allocated for service projects at an annual rate of 15% for research, education and extension and 10% for other projects</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Increase the investments by 6% allocated to all projects of the ministry</b></li> </ul>

<ul style="list-style-type: none"> <li>- <b>Identify the role played by the private, public, cooperative and joint sectors within the framework of economic diversification</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Modify the roles assigned to economic establishments to focus on research and extension rather than production and modify their establishment decrees accordingly</b></li> <li>- <b>Promote private and joint sectors contribution in agricultural investment, particularly through the establishment of specialized marketing companies</b></li> </ul>	<ul style="list-style-type: none"> <li>- <i>Support the institution's work in the fields in which there are no private operators and the exclude the role of government in the fields where private sector succeeds with the government control to ensure qualities and measures</i></li> <li>- <i>Support the role of marketing specialized companies</i></li> </ul>
<p><b>NATURAL RESOURCES CONSERVATION AND RURAL DEVELOPMENT POLICIES</b></p>		
<ul style="list-style-type: none"> <li>- <b>Optimal utilization of cultivable land and adoption of crop structures and agricultural rotations that guarantee sustainable production</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Set the crop rotations suitable for the current crops and seeking alternative crops</b></li> <li>- <b>Modify the crop rotations and starting the planting of some alternative crops</b></li> <li>- <b>Introduce alternative crops in the crop rotations and studying the feasibility of each rotation according to the agro climatic zones</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Adopt crop rotations that increases production</b></li> <li>- <b>Expand planting more profitable alternative crops</b></li> <li>- <i>Introduce alternative crops in the crop rotations and studying the feasibility of each rotation according to the agro climatic zones</i></li> </ul>
<ul style="list-style-type: none"> <li>- <b>Expand the area irrigated from surface and replenishable sources and improve the efficiency of public irrigation systems</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>increase the public system irrigated land at an average of 20000 ha/year</b></li> <li>- <b>Increase the irrigation efficiency in the public irrigation systems by 20% up to 2003 and by 30% up to 2005, and provide the required quantity of water according to the crop water requirement</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Continuing expand the irrigated area by 20000 ha/year</b></li> <li>- <b>Increase the irrigation efficiency in 80% of the public irrigation systems</b></li> <li>- <b>Provide the crop water requirements from public irrigation systems</b></li> </ul>
<ul style="list-style-type: none"> <li>- <b>Rationalize water use through the adoption of modern irrigation systems, control water over exploitation, improve water return and expand irrigated area to the maximum possible</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>provide the required loans for funding the modern irrigation investment</b></li> <li>- <b>Convert 50% of the irrigated area to modern irrigation</b></li> </ul>	<ul style="list-style-type: none"> <li>- <i>Provide requirements to implement the project of converting to modern irrigation system (the Fund of supporting modern irrigation is SP22 Million)</i></li> <li>- <i>Continuing developing irrigation systems</i></li> </ul>

<b>level</b>	<ul style="list-style-type: none"> <li>- <b>start the rehabilitation program of old systems</b></li> <li>- <b>Convert all the irrigated area to modern irrigation including the public irrigation systems</b></li> </ul>	<i>through removing obstacles of implementing (technical and financial related to loans obstacles) and benefiting from dismissal water after treatment</i>
- <b>Mountainous and hilly land reclamation and planting with adaptable fruit trees and crops</b>	<ul style="list-style-type: none"> <li>- <b>operate the reclamation machines in different development and reclamation projects</b></li> <li>- <b>reclaim 33000 ha/year and Plant 24000 ha/year for fruit trees and 9000 ha/year for crops</b></li> <li>- <b>Utilize the rocks resulting from the reclamation process</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Continue reclamation land process and utilize the rocks resulting from</b></li> <li>- <i>Executing the results of utilizing rocks study in order to utilize these rocks and use the lands for agriculture where rocks are collected</i></li> </ul>
-	-	-
- <b>Al Badia development and restoring the vegetation cover and provision of the water required by the population and livestock</b>	<ul style="list-style-type: none"> <li>- <b>provide the machines required for Al Badia development</b></li> <li>- <b>establish wells in some areas to replace dry ones</b></li> <li>- <b>conserve steppes from deterioration through the adoption of an appropriate grazing system</b></li> <li>- <b>increase the pastoral seedlings up to 15 million/year</b></li> <li>- <b>produce 80000 tons of pastoral seeds and increase the direct sowing area</b></li> <li>- <b>Protect 300000 ha/year with the aim of improving the vegetation cover in Al Badia</b></li> <li>- <b>organize grazing in 300000 ha on natural steppes</b></li> <li>- <b>Plant 50000 ha/year for seedlings or by direct sowing</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Plant 60000 ha/year for seedlings or by direct sowing</b></li> <li>- <i>Continue conserving steppes from deterioration through the adoption of an appropriate grazing system</i></li> <li>- <i>Complete increasing the pastoral seedlings up to 15 million/year</i></li> <li>- <i>Continue producing pastoral seeds and increase the direct sowing area</i></li> <li>- <i>Increase pastures productivity and improve living standards of breeders</i></li> <li>- <i>Continue the work of rural development project, which comprises pastures development and standards of living improvement in 3 million hectare using participatory approach, and protect 300 thousand hectares to increase vegetation cover in Al-Badia</i></li> </ul>
- <b>Establish the required infrastructure to provide the product and input</b>	- <b>Enhance the support services such as the establishment of 1000 km/year</b>	- <i>Establish rural banks and improve loaning mechanisms for all agricultural processes</i>

<p><b>transport and other facilities</b></p>	<p><b>of agricultural roads to service 200000 hectares</b></p> <ul style="list-style-type: none"> <li>- <b>Establish wholesale markets in the Syrian governorates</b></li> <li>- <b>Develop other support services and information systems</b></li> <li>- <b>Increase the agricultural roads investments</b></li> </ul>	<p><i>either pre or post harvesting</i></p> <ul style="list-style-type: none"> <li>- <i>Establish wholesale markets in the Syrian governorates and provide it with requirements and rent it</i></li> <li>- <i>Continue Developing other support services and information systems</i></li> </ul>
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#### **4. Conclusion and recommendations**

According to analysis findings, it was noticeable that there was an increasing in plant production's growth rate and livestock's as well, but with less degree for the later one despite the bad effects of drought that preceded that period, which reflected a relative improvement in standards living in rural areas through the improvement of economic return of production unit. In addition, increasing agricultural labor productivity due to modern techniques transforming such as crop's productivity increasing, applying the integrated management of pesticide control, and focusing on biological control applications to some fruitful trees and field crops that have effective impact on product quality and decreasing the costs.

The government has conveyed the new changes in internal and external economic context through regulations and continuing pursuit toward enhancing sustainable use of natural resources concept, especially water in order to provide a suitable economic investment environment for inputs. Whereat the substantial changes that happened in the international economic context evoked the government to modify its policies and production plans so it gave space to private sector to engage in the production process by giving it the opportunity in providing some production inputs and contributing in the marketing process. Although the facilities presented to that sector, its performance still need to be improved by promoting the agricultural product's quality, increase its competitiveness in the international markets, improve the processing of the agricultural commodities to increase the value added , and expand crops that enjoy comparative advantage.

Agricultural extension plays a significant role in production process development through its role in transforming the information and new technologies to the producers. However, it was noticeable that extension was unable to execute all its activities due to inputs unavailability in suitable quantity and quality although there are enough number of extension units that displayed in the whole country. On the other side, it was noticeable that there was a decrease in agricultural credit volume, especially for long, medium, and short-term credit and devoting most of them to short term credit, which recall increase medium and long term credit proportion.

According to what have been mentioned, it is possible to suggest the following recommendations that can enable agricultural sector to go further ahead towards realizing economic development and increasing its contribution at several domains that are as follows:

##### Natural resources and rural development policies

- Focusing on setting policies that insure sustainable use of natural resources ( land, water, forest and others)
- Increasing the converting rate into modern irrigation methods
- Introducing alternative crops especially that enjoy comparative advantage in the agricultural rotations.
- Expanding the reclaimed land area of mountainous and hilly land and providing the required machineries
- improving irrigation efficiency at public network irrigation, and speedup of maintain and rehabilitate of old network.
- Improving infrastructure (develop the agricultural roads- establishing whole sale markets in rural areas- promote infrastructure that relate to socio-economic as schools and health centers)

##### Marketing and international trade policies

- The improvement of the value added by means of enhancing the agro-processing activities and adopting the international standards.

- Providing the accurate policies and mechanisms that insure adopting the international measurements for exported agricultural products, and to insure its entrance strongly to the international markets.
- Produce commodities that enjoy of comparative advantage at low costs to increase its competitiveness in the international markets
- Establish a developed information system, which insure handling information to the producers, exporters, processors, and decision makers about global market prices, its requirements and its demand schedule.

#### Institutional policies

- Giving priority to the agricultural sector
- Modifying economic establishment's role to research one
- Defining the role of other bodies that related to the agricultural sector
- Increasing the budget allowance to training ( such as providing transportation means, training requirement , new technology)
- Training the extension staff and providing requirements needed to transform new techniques and guarantee the adoption of the accurate technical practices at field level.

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# **Annexes**

**Annex 1: Original SAS Program**

**Annex 2: Conversion Policy Matrix**

**Annex 3: Planned Objectives**

**Annex 4: Actual Achievements Both For Targets And Goals**

**Annex 5: Required Questions According To The Programs And Actions In The MTR**

## **Annex 1: Original SAS Program**

### **I. Natural Resources**

- I.1** Optimal utilization of cultivable land, adoption of crop structure and agricultural rotations that ensure production sustainability;
- I.2** Expand the area irrigated from surface and replenishable sources and improve the efficiency of public irrigation systems;
- I.3** Rationalize water use through the adoption of modern irrigation systems, control water over exploitation, improve water return and expand irrigated area to the maximum possible level;
- I.4** Mountainous and hilly land reclamation and planting with adaptable fruit trees and crops;
- I.5** Al Badia development and restoring the vegetation cover and provision of the water required by the population and livestock.

### **II. Plant Production**

- II.1** Irrigated and rain fed yield increase;
- II.2** Meeting the requirement of agro food and manufacturing industry;
- II.3** Produce an export surplus of the products that enjoy a comparative advantage, enhance these products' competitiveness, and produce the proper quantities and qualities according to the marketing windows;
- II.4** Reduce the cost of production through the adoption of modern technologies and planting high yield varieties that are adaptable to the local environment.

### **III. Livestock production**

- III.1** Adopt artificial insemination and provide its requirements;
- III.2** Expand the genetic improvement of local races;
- III.3** Increase and improve the local production of vaccines to cover the local demand and export the surplus;
- III.4** Adopt the livestock diseases diagnosis programs;
- III.5** Develop local rural industry based on livestock products.

### **IV. Support Services**

- IV.1** Develop the agricultural research strategy, restructure the research programs and focus on modern research techniques;
- IV.2** Establish modern research centers equipped with the research requirements;
- IV.3** Develop the genetic resource conservation process;
- IV.4** Organize and develop the agricultural research, issue the Agricultural Scientific Research Commission establishment decree to encourage researchers and benefit from the expertise in the field of agricultural research;
- IV.5** Train the agricultural researchers;
- IV.6** Train agricultural engineers and help them implement the extension research programs;
- IV.7** Increase the number of extension units and supply them with the required inputs;

- IV.8** Develop the training centers and provide them with the required equipment and establish modern training centers in the rural areas;
- IV.9** Establish agricultural high schools and institutes and support them with the required labs and audio visual aids;
- IV.10** Develop the post harvest practices, improve the products quality and control loss and waste;
- IV.11** Establish the required infrastructure to provide the product and input transport and other facilities.

## **V. Production inputs**

Provide all the required inputs, particularly:

- V.1** Chemical fertilizers at reasonable prices and on timely manners and eliminating the intermediate part of the marketing chain;
- V.2** Improved seeds for crops and vegetables;
- V.3** Healthy and certified high yield seedlings in order to meet the requirements of the international markets;
- V.4** Locally produced high quality veterinary medicines;
- V.5** Good packages;
- V.6** Biological control.

## **VI. Agricultural Policy**

- VI.1** Give priority to the agricultural sector compare to other sectors and increase the investments;
- VI.2** Identify the role played by the private, public, cooperative and joint sectors within the framework of economic diversification;
- VI.3** Eliminate responsibility fragmentation among different ministries and institutions involved in agriculture;
- VI.4** Reconsider the finance policies;
- VI.5** Develop the domestic and international marketing activities;
- VI.6** Adopt an appropriate pricing policy



## **Annex 2: Policies**

**A. Production Oriented Policies**

**B. Marketing and Processing Policies**

**C. International Trade Policies**

**D. Institutional Reform Policies**

**E. Natural Resource Conservation and Rural Development Policies**



**Annex 3: Conversion Matrix between Original SAS Programs and MTR Policies and Programs**

SAS Programs	MTR Policies and programs														
	A: Production Oriented Policies			B. Marketing and Processing			C. Int trade	D: Institutional Oriented Policies				E: Natural Resources Conservation & Rural Development policies			
	A1.Crop and Trees	A2.Livestock	A3.Inputs	B.1 Pricing.	B2 Proc	B.3 Mar.		D1.Resaerch	D2.Extension	D3.Training	D4.Institutions	E.1 Land	E.2 Water	E.3 al Badia	E.4 Inf.
I.1 NR												X			
I.2 NR													X		
I.3 NR												X	X		
I.4 NR															
I.5 NR														X	
II.1 PP	X														
II.2 PP	X														
II.3 PP							X								
II.4 PP	X														
III.1 LP		X													
III.2 LP		X													
III.3 LP		X													
III.4 LP		X													
III.5 LP					X										
IV.1 SS								X							
IV.2 SS								X							
IV.3 SS								X							
IV.4 SS								X							
IV.5 SS								X							
IV.6 SS									X						
IV.7 SS									X						
IV.8 SS										X					
IV.9 SS										X					
IV.10a SS					X										
IV.10b SS							X								
IV.11 SS														X	
V.1 PI			X												
V.2 PI			X												
V.3 PI			X												
V.4 PI		X													
V.5 PI					X										
V.6 PI	X														
VI.1 AP											X				
VI.2 AP											X				
VI.3 AP											X				
VI.4 AP											X				
VI.5.a AP						X									
VI.5.b AP							X								
VI.6..AP				X											



## **I Natural Resources (NR)**

**I.1 NR = E1 Land:** Optimal utilization of cultivable land, adoption of crop structure and agricultural rotations that ensure production sustainability

**I.2 NR = E2 Water:** Expand the area irrigated from surface and replenishable sources and improve the efficiency of public irrigation systems

**I.3 NR = E2 Water:** Rationalize water use through the adoption of modern irrigation systems, control water over exploitation, improve water return and expand irrigated area to the maximum possible level

**I.4 NR = E1 Land:** Mountainous and hilly land reclamation and planting with adaptable fruit trees and crops

**I.5 NR = E1 Al Badia:** Al Badia development and restoring the vegetation cover and provision of the water required by the population and livestock

## **II Plant Production (PP)**

**II.1 PP = A1 Crop and Trees:** Irrigated and rain fed yield increase

**II.2 PP = A1 Crop and Trees:** Meeting the requirement of agro food and manufacturing industry

**II.3 PP = C International Trade:** Produce an export surplus of the products that enjoy a comparative advantage, enhance these products' competitiveness, and produce the proper quantities and qualities according to the marketing windows

**II.4 PP = A1 Crop and Trees:** Reduce the cost of production through the adoption of modern technologies and planting high yield varieties that are adaptable to the local environment

## **III Livestock Production (LP)**

**III.1 LP = A2 Livestock:** Adopt artificial insemination and provide its requirements

**III.2 LP = A2 Livestock:** Expand the genetic improvement of local races

**III.3 LP = A2 Livestock:** Increase and improve the local production of vaccines to cover the local demand and export the surplus

**III.4 LP = A2 Livestock:** Adopt the livestock diseases diagnosis programs

**III.5 LP = B2 Processing:** Develop local rural industry based on livestock products

## **IV Supporting services (SS)**

**IV.1 SS = D1 Research:** Develop the agricultural research strategy, restructure the research programs and focus on modern research techniques

**IV.2 SS = D1 Research:** Establish modern research centers equipped with the research requirements

**IV.3 SS = D1 Research:** Develop the genetic resource conservation process

**IV.4 SS = D1 Research:** Organize and develop the agricultural research, issue the Agricultural Scientific Research Commission establishment decree to encourage researchers and benefit from the expertise in the field of agricultural research

**IV.5 SS = D1 Research:** Train the agricultural researchers

**IV.6 SS = D2 Extension:** Train agricultural engineers and help them implement the extension research programs

**IV.7 SS = D2 Extension:** Increase the number of extension units and supply them with the required inputs

**IV.8 SS = D3 Training:** Develop the training centers and provide them with the required equipment and establish modern training centers in the rural areas

**IV.9 SS = D3 Training:** Establish agricultural high schools and institutes and support them with the required labs and audio visual aids

**IV.10 a SS = B2 Processing: Develop the post harvest practices;** improve the products quality and control loss and waste

**IV.10 b SS = C International Trade:** Develop the post harvest practices; **improve the products quality and control loss and waste**

**IV.11 SS = E4 Infrastructure:** Establish the required infrastructure to provide the product and input transport and other facilities

#### **V Production Inputs (PI)**

**V 1 PI = A3 Inputs:** Chemical fertilizers at reasonable prices and on timely manners and eliminating the intermediate part of the marketing chain

**V 2 PI = A3 Inputs:** Improved seeds for crops and vegetables

**V 3 PI = A3 Inputs:** Healthy and certified high yield seedlings in order to meet the requirements of the international markets

**V 4 PI = A2 Livestock:** Locally produced high quality veterinary medicines

**V.5 PI = B2 Processing:** Good packages

**V 6 PI = A1 Crop and Trees:** Biological control

#### **VI Agricultural Policy (AP)**

**VI 1 AP = D4 Institution:** Give priority to the agricultural sector compare to other sectors and increase the investments

**VI 2 AP = D4 Institutions:** Identify the role played by the private, public, cooperative and joint sectors within the framework of economic diversification

**VI 3 AP = D4 Institutions:** Eliminate responsibility fragmentation among different ministries and institutions involved in agriculture

**VI 4 AP = D4 Institutions:** Reconsider the finance policies

**VI.5 a = AP = B3 Marketing:** Develop the **domestic** and international marketing activities

**VI 5 b AP = C International Trade:** Develop the domestic and **international** marketing activities

**VI.6 AP = B1 Pricing:** Adopt an appropriate pricing policy

## **Annex -4 – Policies, Programs, and Actions of the SAS in the structure of the MTR**

### **A- Production Oriented Policies**

<b>Programs</b>	<b>Objectives</b>	<b>Action up to 2003</b>	<b>Action up to 2005</b>
<b>A1- Crop And Trees</b>	<b>II.1-Irrigated and rain fed yield increase</b>	<b>a</b> -Increase the irrigated yields by 3% and rain fed yields by 1%	Increase irrigated yields by 5% and rain fed yields by more than 1%
		<b>b</b> -Consider the possibility to adopt new crops in the environmentally appropriate areas	Consider the possibility to adopt new crops in the environmentally appropriate areas
	<b>II.2-Meeting the requirement of agro food and manufacturing industry</b>	<b>a</b> -provide the agricultural raw materials required by the domestic	Provide the requirements of current industries
		<b>b</b> -Coordination with the processors to select the most appropriate varieties	Plant new varieties needed by industry
			Improve rural industries
	<b>II.4-Reduce the cost of production through the adoption of modern technologies and planting high yield varieties that are adaptable to the local environment</b>	<b>a</b> -determine the investment requirements for applying modern technology on agriculture	Develop the technology applied on agriculture in terms of machines, high yield varieties, reduced cost
		<b>b</b> -Provide high yield varieties to increase yields and reduce cost.	Reduce loss
	<b>V.6-Biological control</b>	<b>a</b> -improve the agricultural quarantine centers	
		<b>b</b> -develop the post entry quarantine and establish isolation gardens	
		<b>c</b> -improve the seed lab and establish a diagnostic lab	Establish chemicals analysis labs
		<b>d</b> -enhance the air control unit capacities and support it with 10 airplanes	Provide the air control unit with 15 new airplanes

		<b>e-improve the biological control</b>	Apply biological control on the main crops and trees
<b>A2- Live-stock</b>	<b>III.1-Adopt artificial insemination and provide its requirements</b>	<b>a-Adopt the artificial insemination on a wide scale</b>	Improve the work mechanism and increase the artificial inseminations by 10 %/year Introduce new livestock species
		<b>b-Identify the advantages and disadvantages</b>	
		<b>c-Design the future work plan</b>	
	<b>III.2-Expand the genetic improvement of local races</b>	<b>a-Assess the previous work and set the technical conditions for expansion and improvement</b>	
		<b>b-Establish stations for the multiplication of improved livestock semen and disseminate improved races</b>	Maintain the process of the establishment of stations for the multiplication of improved livestock semen and disseminate improved races
	<b>III.3-Increase and improve the local production of vaccines to cover the local demand and export the surplus</b>	<b>a-Assess the vaccine demand</b>	Expand the vaccines production and start the production of new vaccines with the aim of covering 50% of the total demand at least
		<b>b-Identify the locally produced types;</b>	Increase the genetically improved herds by 10%/year
		<b>c-Establish a firm to produce the imported vaccines</b>	Increase local production by 15%/year
	<b>III.4-Adopt the livestock diseases diagnosis programs</b>	<b>a-Introduce the new diagnostic techniques</b>	Start the adoption of new diagnostic techniques and provide timely treatment
	<b>V.4-locally produced high quality veterinary medicines</b>	<b>a-Adopt the proper mechanism for the development of local medicine production</b>	Increase the types of locally produced veterinary medicines by all sectors
<b>b-Promote the private sector activity in medicine production and exempt their inputs from taxes and fees</b>			
<b>c-Increase local production by 10%/year</b>		Secure the requirements of this increase	

<b>A3- Inputs</b>	<b>V.1</b> -Chemical fertilizers at reasonable prices and on timely manners and eliminating the intermediate part of the marketing chain	<b>a</b> -assess the experience of private sector import of fertilizers in addition to the public sector and define the optimal method that reduces costs and provides good quality products	Adopt the optimal method to provide fertilizers in good quality and keep the balance of the markets and prices
		<b>b</b> -start the elimination of intermediaries	Continue the elimination of intermediaries
		<b>c</b> -support the control on private sector imports	Improve the quarantine centers to ensure the introduction of healthy varieties.
		<b>d</b> -Develop the local production of good quality fertilizers to meet the local demand	Enhance the quality of the local products to compete with the imported fertilizers
	<b>V.2</b> -Improved seeds for crops and vegetables	<b>a</b> -support the General Establishment for Seed Multiplication and modify its establishment decree from an economic to a research establishment	
		<b>b</b> -produce the vegetables seeds like potato seeds and others	continue the production of vegetables seeds like potato seeds and others
	<b>V.3</b> -Healthy and certified high yield seedlings in order to meet the requirements of the international markets	<b>a</b> -establish new public nurseries to produce healthy seedlings	Support the product quality control
		<b>b</b> -reduce the period taken for newly introduced varieties testing	▪
		<b>c</b> -Introduce adaptable new varieties.	Continue the introduction of adaptable new varieties

### **B- Marketing and Processing Policies**

<b>Programs</b>	<b>Objectives</b>	<b>Action up to 2003</b>	<b>Action up to 2005</b>
<b>B.1 Pricing</b>	<b>VI.6</b> -Adopt an appropriate pricing policies	<b>a</b> - Maintain the pricing policy applied on strategic crops to ensure the implementation of the agricultural plan	▪ Reduce the priced crops and restrict the pricing to wheat (which is the main food staple) and other crops process by the public plants (cotton, sugar beet and tobacco); Price alternative crops to encourage farmers to produce them
<b>B.2.Processing</b>	<b>III.5</b> -Develop local rural industry based on livestock products	<b>a</b> -identify the livestock concentration areas	

		<b>b</b> -determine the quantity produced, specially in terms of milk	<ul style="list-style-type: none"> <li>▪ Maintain the provision of loans to producers;</li> <li>▪ Continue the support of agro processing establishment;</li> <li>▪ Provide refrigerated trucks</li> </ul>
		<b>c</b> -provide producers with the required loans in the production areas with the aim of improving rural industries	
		<b>d</b> -enhance the agro processing establishments in the production areas	
		<b>e</b> -Secure refrigerated trucks	
	<b>IV.10.a-Develop the post harvest practices, improve the products quality and control loss and waste</b>	<b>a</b> -Provide the required loans for the establishment pack houses and instal grading and sorting lines	Maintain the provision of loans to producers
		<b>b</b> -provide the required loans for packages production	
<b>V.5-Good packages</b>	<b>a</b> -allow private sector to import and produce all types of packages	provide the public establishments with 25% of the required bags	
	<b>b</b> -provide the public establishments with 50% of the required bags to ensure price stability		
<b>B.3.Marketing</b>	<b>VI.5 a-Develop the domestic and international marketing activities</b>	<b>VI.5 a-Domestic marketing</b>	<ul style="list-style-type: none"> <li>▪ Improve the domestic marketing on all levels</li> <li>▪ Start the implementation of the results of the assessment of the General Company for Fruit and Vegetables</li> </ul>
		<b>a</b> -establish marketing cooperatives	
		<b>b</b> - establish cold storage facilities	
		<b>c</b> -facilitate modern transport means acquisition	
		<b>d</b> -assess the role plaid by General Company for Fruits and Vegtabes	

### C- International Trade Policies

Programs	Objectives	Action up to 2003	Action up to 2005
<b>International Trade</b>	<b>II.3</b> -Produce an export surplus of the products that enjoy a comparative advantage; Enhance these products' competitiveness; Produce the proper	<b>a</b> -consider the requirements of foreign markets in terms of quantity, quality and marketing windows	<ul style="list-style-type: none"> <li>▪ Adopt new varieties that meet the requirements of foreign markets and determine the planting timing that is</li> </ul>

	quantities and qualities according to the marketing windows	<b>b-</b> select the most appropriate areas for the production of export crops	most appropriate to the marketing windows; <ul style="list-style-type: none"> <li>▪ Produce competitive advantage crops and enhance their competitiveness</li> </ul>
		<b>c-</b> Carry out experiments to introduce the required crops	
	<b>VI.5 b-</b> Develop the domestic and <b>international marketing activities</b>	<b>VI.5 b Foreign marketing</b> <b>a-</b> remove export restrictions	Continue the elimination of export restrictions
		<b>b-</b> adopt the export promotion measures	Improve the work mechanism
		<b>c-</b> identify the control agency and establish labs that give quality certificates to producers	Increase the number of labs that give the quality certificates
		<b>d-</b> Remove all types of taxes and fees on exported agricultural products	Conclude bilateral, Arab and international agreement to facilitate agricultural trade flow and obtain preferential treatment for the agricultural exports.
	<b>IV.10 b-</b> Develop the post harvest practices, <b>improve the products quality and control loss and waste</b>	<b>a-</b> Establish a market information system to provide producers and exporters with the required information on the foreign market prices qualities and market windows	Continue the development of other services and information systems

## D- Institutional Oriented Policies

Programs	Objectives	Action up to 2003	Action up to 2005
<b>D1- Research</b>	<b>IV.1-</b> Develop the agricultural research strategy, re-structure the research programs and focus on modern research techniques	<b>a-</b> assess the current situation of the agricultural research to identify the strengths and weaknesses and design a future vision	<ul style="list-style-type: none"> <li>▪ expand research activities and apply modern methods like genetic engineering and tissue culture</li> <li>▪ Develop the executive programs of work taking into account the vertical and lateral expansion</li> </ul>
		<b>b-</b> develop a clear strategy for agricultural research	
		<b>c-</b> restructure the scientific research and prioritize the research areas	
		<b>d-</b> Develop the executive programs of work taking into account the vertical and lateral expansion	
	<b>IV.2-</b> Establish modern research centers equipped with the research requirements	<b>a-</b> determine the different specialized research areas according to the type of production and activity in each area	Develop and expand the specialized centers to cover both plant and livestock products
		<b>b-</b> start the utilization of specialized research centers on crops, fruit, vegetables, protected crops, livestock, irrigation, land and forest research	Establish research stations connected to the specialized ones to contribute to their work
		<b>c-</b> Develop the livestock research stations (cattle, sheep and goats)	Continue the development of research stations in different agricultural areas.
	<b>IV.3-</b> Develop the genetic resource conservation process	a- Develop and expand the genetic resource conservation centers	<ul style="list-style-type: none"> <li>▪ Establish genetic resource banks</li> <li>▪ Develop scientific research in the field of genetic engineering and tissue culture.</li> </ul>
<b>IV.4-</b> Organize and develop the agricultural research, issue the Agricultural Scientific Research Commission establishment decree to encourage re-	a-Issue the establishment decree of the Agricultural Scientific Research Commission and set the future work mechanism	<ul style="list-style-type: none"> <li>▪ Maintain the attraction of qualified researchers</li> <li>▪ Support research and promote re-</li> </ul>	

	searchers and benefit from the expertise in the field of agricultural research	b- Restructure the agricultural research institutions c- Attract the qualified researchers from different levels	searchers and curtail researchers' immigration to other sectors
	<ul style="list-style-type: none"> <li>▪ <b>IV.5-</b> Train the agricultural researchers</li> </ul>	a- study the requirements of the agricultural sector in terms qualified staff and securing fellowships for 25 beneficiaries/year b- Conclude cooperation agreements with research centers to ensure the sustainability of post graduate and other types of external training	Enhance post graduate external training and increase foreign training opportunities to 50/year or import training consultants to give training courses
<b>D2- Extension</b>	<b>IV.6-</b> train agricultural engineers and help them implement the extension research programs	a-Design specialized extension programs on the crop level b- Provide the required inputs to develop these programs and enhance interaction with producers.	Organize training courses for extension agents and provide them with reasonable incentives
	<b>IV.7-</b> increase the number of extension units and supply them with the required inputs	a- Support the extension units with extension agents, transport means and other equipment	<ul style="list-style-type: none"> <li>▪ Provide lodging for 10 units;</li> <li>▪ Provide the equipment needed (projectors, TVs, videos, etc);</li> <li>▪ Supply each unit with one vehicle at least.</li> </ul>
		b- Increase the number of extension units by 15/year.	Increase the number of extension units by 20/year

<b>D3- Training</b>	<b>IV.8-</b> Develop the training centers and provide them with the required equipment and establish modern training centers in the rural areas	a-Provide the required equipment to the training centers in Damascus, Dar' a, Homs such as new teaching classes and services (study rooms, restaurants, lodging, and audio visual aids).	Establish specialized training center in main production areas
	<b>IV.9-</b> Establish agricultural high schools and institutes and support them with the required labs and audio visual aids	a- Establish three intermediate institutes	Establish six intermediate institutes
		b- Establish 2 high institutes form different specialization to give 3 years training courses	Establish 2 high institutes form different specialization to give 3 years training courses
		c- Establish 10 labs for the institutes and high schools and in addition to the required audio visual aids	Establish 15 labs for the institutes and high schools and in addition to the required audio visual aids
		d- Provide a vehicle to transport the trainees from and to the schools and to the training fields	Provide a vehicle to transport the trainees from and to the schools and to the training fields.
<b>D4- Institutions</b>	<b>VI.1-</b> Give priority to the agricultural sector compare to other sectors and increase the investments	Increase the agricultural investments allocated for service projects at an annual rate of 15% for research, education and extension and 10% for other projects	Increase the investments allocated to service projects by 10% for research, education and extension and 10% for other projects
	<b>VI.2-</b> Identify the role played by the private, public, cooperative and joint sectors within the framework of economic diversification	a- Modify the roles assigned to economic establishments to focus on research and extension rather than production and modify their	Start the implementation of the research and extension roles of these establishments

		establishment decrees accordingly	
		b- Promote private and joint sectors contribution in agricultural investment, particularly through the establishment of specialized marketing companies.	Continue the promotion of private and joint sectors contribution in agricultural investment, particularly through the establishment of specialized marketing companies
		c- Promote the establishment of producers units	Establish specialized unions
		d- Establish a public export agency to open new markets and control exports	Establish offices for the export agency to provide the required services to exporters (such as information)
	<b>VI.3-Eliminate responsibility fragmentation among different ministries and institutions involved in agriculture</b>	a- Review and improve the work mechanism and affiliation of the institutions involved in the agricultural production such as seed processing units, sugar plants and dairy plants	Adopt the review results in improving the work of the agriculture-involved institutions with the aim of maximizing the returns and improving the services provided to agriculture
	<b>VI.4-Reconsider the finance policies</b>	a- provide the agricultural sector with the required loans in consistent with its role in the production process	Increase the loans allocated for the agricultural sector by 10%
		b- increase the agricultural loans by 12%/year of the total loans	
		c- increase the ACB capital and expand its operations	<ul style="list-style-type: none"> <li>▪ Improve the loaning process and reduce the document work;</li> <li>▪ Automate the loaning work</li> </ul>
		d- Increase the long term share by 5% for the establishment of the production base	Increase the long term loans to reach 10%

### E- Natural Resources Conservation and Rural Development Policies

Programs	Objectives	Action up to 2003	Action up to 2005
<b>E1- Land</b>	<b>I.1</b> -Optimal utilization of cultivable land and adoption of crop structures and agricultural rotations that guarantee sustainable production	<b>a</b> -Set the crop rotations suitable for the current crops and seeking alternative crops	<ul style="list-style-type: none"> <li>▪ Modify the crop rotations and starting the planting of some alternative crops;</li> <li>▪ Introduce alternative crops in the crop rotations and studying the feasibility of each rotation according to the agro climatic zones</li> </ul>
	<b>I.4</b> -Mountainous and hilly land reclamation and planting with adaptable fruit trees and crops	<b>a</b> -operate the reclamation machines in different development and reclamation projects	<ul style="list-style-type: none"> <li>▪ Improve the reclamation process</li> <li>▪ Utilize the rocks resulting from the reclamation process.</li> </ul>
		<b>b</b> -reclaim 33000 ha/year	Reclaim 33000 ha/year
		<b>c</b> -Plant 24000 ha for fruit trees and 9000 ha for crops	
<b>E2- Water</b>	<b>I.2</b> -Expand the area irrigated from surface and replenishable sources and improve the efficiency of public irrigation systems	<b>a</b> -increase the public system irrigated land at an average of 20000 ha/year	<ul style="list-style-type: none"> <li>▪ expand the irrigated area by 20000 ha/year</li> </ul>
		<b>b</b> -Increase the irrigation efficiency in the public irrigation systems by 20%.	<ul style="list-style-type: none"> <li>▪ improve irrigation efficiency in 30% of the public irrigation systems;</li> <li>▪ Defining the crop water requirement</li> </ul>
	<b>I.3</b> -Rationalize water use through the adoption of modern irrigation systems, control water over exploitation, improve water return and expand irrigated area to the maximum possible level;	<b>a</b> -provide the required loans for funding the modern irrigation investment	Convert all the irrigated area to modern irrigation including the public irrigation systems.
<b>b</b> -convert 50% of the irrigated area to modern irrigation			
<b>c</b> -start the rehabilitation program of old systems			
<b>E3- Al Badia</b>	<b>I.5</b> -Al Badia development and restoring the vegetation cover and provision of the water required by the population and livestock	<b>a</b> -provide the machines required for Al Badia development	<ul style="list-style-type: none"> <li>▪ organize grazing in 300000 ha on natural steppes;</li> <li>▪ Plant 50000 ha/year for seedlings or by direct sowing.</li> </ul>
		<b>b</b> - establish wells in some areas to replace dry ones	
		<b>c</b> - conserve steppes from deterioration through the adoption of an appropriate grazing system	

		<p><b>d-</b> increase the pastoral seedlings up to 15 million/year</p> <p><b>e-</b> produce 80000 tons of pastoral seeds and increase the direct sowing area</p> <p><b>f-</b>Protect 300000 ha/year with the aim of improving the vegetation cover in Al Badia</p>	
<b>E4- Infra-structure</b>	<b>IV.11-</b> Establish the required infrastructure to provide the product and input transport and other facilities	<p><b>a-</b>Enhance the support services such as the establishment of 1000 km/year of agricultural roads to service 200000 hectares</p>	<ul style="list-style-type: none"> <li>▪ Increase the agricultural roads investments;</li> <li>▪ Continue the development of other services and information systems.</li> </ul>
		<p><b>b-</b> Establish wholesale markets in the Syrian governorates</p>	
		<p><b>c-</b> Develop other support services and information systems</p>	

**Annex 5: A summary assessment of SAS objective (actions) achievements**

<b>Policy</b>	<b>Pro-gramme</b>	<b>Objectives</b>	<b>Actions (*)</b>	<b>Assessment (**)</b>	<b>Notes</b>
<b>A- Production orientation policy</b>	<b>A1- Plant production</b>	<b>A.1.1-</b> irr & rainfed yield increases	<ul style="list-style-type: none"> <li>• Area</li> <li>• Yield</li> <li>• production</li> </ul>	+/= + +	Cotton < PT (Planned Target) Cotton (-GR), olive (+ GR, but < PT)
		<b>A.1.2-</b> Meeting the requirement of agro food and manufacturing industry	<ul style="list-style-type: none"> <li>• provide the agricultural raw materials required by the domestic</li> <li>• Coordination with the processors to select the most appropriate varieties</li> <li>• Plant new industrial varieties</li> </ul> Improve rural industries	= = =	
		<b>A.1.3-</b> Reduce the cost of production through the adoption of modern technologies and planting high yield varieties that are adaptable to the local environment	<ul style="list-style-type: none"> <li>• determine the investment requirements for applying modern technology on agriculture</li> <li>• Provide high yield varieties to increase yields and reduce cost.</li> <li>• Develop the technology applied on agriculture in terms of machines, high yield varieties, reduced cost</li> </ul>	= = =	
		<b>A.1.4-</b> Biological control	<ul style="list-style-type: none"> <li>• Improve the agricultural quarantine centers</li> <li>• Develop the post entry quarantine and establish isolation gardens</li> <li>• improve the seed lab and establish a diagnostic lab</li> <li>• Enhance the air control unit</li> </ul>	= -- = -	

			capacities and support it with 10 airplanes up to 2003 and 15 airplanes up to 2005 <ul style="list-style-type: none"> <li>• Improve the biological control</li> <li>• Establish chemicals analysis labs</li> <li>• Apply biological control on the main crops and trees</li> </ul>	= = =	
<b>A2- Live-stock</b>	<b>A.2.1</b> -Increase the livestock production	<ul style="list-style-type: none"> <li>• Red meat</li> <li>• White meat</li> <li>• Milk</li> <li>• Fish</li> </ul>	-- ++ - -		But < PT But < PT
	<b>A.2.2</b> -Adopt artificial insemination and provide its requirements	<ul style="list-style-type: none"> <li>• Adopt the artificial insemination on a wide scale</li> <li>• Identify the advantages and disadvantages</li> <li>• Design the future work plan</li> <li>• Introduce new livestock species</li> </ul>	- ? ? = -		But < PT (5.7%)
	<b>A.2.3</b> -Expand the genetic improvement of local races	<ul style="list-style-type: none"> <li>• Increase the genetically improved herds by 10%/year</li> <li>• Increase local production by 15%/year</li> <li>• Assess the previous work and set the technical conditions for expansion and improvement</li> </ul>	-/- -  <b>NI</b>		Al Shami goats & red meat
		<ul style="list-style-type: none"> <li>• Establish stations for the multiplication of improved livestock semen and disseminate improved races</li> <li>• Maintain the process of the establishment of stations for the multiplication of improved live-</li> </ul>	<b>NI</b>  <b>NI</b>		

			stock semen and disseminate improved races		
		<b>A.2.4</b> -Increase and improve the local production of vaccines to cover the local demand and export the surplus	<ul style="list-style-type: none"> <li>Identify the locally produced types;</li> <li>Establish a firm to produce the imported vaccines</li> <li>Expand the vaccines production and start the production of new vaccines with the aim of covering 50% of the total demand at least</li> </ul>	= - = =	But < PT (4.2%)
		<b>A.2.5</b> -Adopt the livestock diseases diagnosis programs	Introduce the new diagnosis techniques	=	
		<b>A.2.6</b> -locally produced high quality veterinary medicines	<ul style="list-style-type: none"> <li>Adopt the proper mechanism for the development of local medicine production</li> <li>Promote the private sector activity in medicine production and exempt their inputs from taxes and fees</li> <li>Increase local production by 10%/year</li> <li>Secure the requirements of this increase</li> </ul>	NI - / = NI NI	
	<b>A.3-Input</b>	<b>A.3.1</b> -Provide the chemical fertilizers at reasonable prices and on timely manners and	<ul style="list-style-type: none"> <li>assess the experience of private sector import of fertilizers in addition to the public sector and define the optimal method that reduces costs and provides good</li> </ul>	-	

		eliminating the intermediate part of the marketing chain	<p>quality products</p> <ul style="list-style-type: none"> <li>• start the elimination of intermediaries</li> <li>• support the control on private sector imports</li> <li>• Develop the local production of good quality fertilizers to meet the local demand</li> </ul>	<p>?</p> <p>=</p> <p>=</p>	
		<b>A.3.2</b> -Improved and provide seeds for crops and vegetables especially potato	<ul style="list-style-type: none"> <li>• support the General Establishment for Seed Multiplication and modify its establishment decree from an economic to a research establishment</li> <li>• produce the vegetables seeds like potato seeds and others</li> <li>• continue the production of vegetables seeds like potato seeds and others</li> </ul>	<p>-</p> <p>=</p>	
		<b>A.3.3</b> -Provide healthy and certified high yield seedlings in order to meet the requirements of the international markets	<ul style="list-style-type: none"> <li>• establish new public nurseries to produce healthy seedlings</li> <li>• reduce the period taken for newly introduced varieties testing</li> <li>• Introduce adaptable new varieties.</li> <li>• Support the product quality control</li> </ul>	<p>=</p> <p>?</p> <p>=</p> <p>=</p>	
<b>B-Marketing and Processing Policies</b>	<b>B.1 Pricing</b>	<b>B.1.1</b> -Adopt an appropriate pricing policies	<ul style="list-style-type: none"> <li>• Maintain the pricing policy applied on strategic crops to ensure the implementation of the agricultural plan</li> <li>• After 2003, reduce the priced crops and restrict the pricing to</li> </ul>	<p>=</p> <p>=</p>	

			wheat (which is the main food staple) and other crops process by the public plants (cotton, sugar beet and tobacco); Price alternative crops to encourage farmers to produce them		
	<b>B.2.Processing</b>	<b>B.2.1-Develop local rural industry based on livestock products</b>	<ul style="list-style-type: none"> <li>• identify the livestock concentration areas</li> <li>• determine the quantity produced, specially in terms of milk</li> <li>• provide producers with the required loans in the production areas with the aim of improving rural industries</li> <li>• enhance the agro processing establishments in the production areas</li> <li>• Secure refrigerated trucks</li> </ul>	= - - - =	
		<b>B.2.2-Develop the post harvest practices, improve the products quality and control loss and waste</b>	<ul style="list-style-type: none"> <li>• Provide the required loans for the establishment pack houses and install grading and sorting lines</li> <li>• provide the required loans for packages production</li> </ul>	= =	
		<b>B.2.3-Good packages</b>	<ul style="list-style-type: none"> <li>• allow private sector to import and produce all types of packages</li> <li>• provide the public establishments with 50% of the required bags to ensure price stability</li> </ul>	= =	
	<b>B.3.Market</b>	<b>B.3.1-Develop the</b>	• establish marketing coopera-	-	

	<b>ing</b>	<b>domestic</b> and international marketing activities	<ul style="list-style-type: none"> <li>tives</li> <li>• establish cold storage facilities</li> <li>• facilitate modern transport means acquisition</li> <li>• assess the role plaid by General Company for Fruits and Vegetables</li> <li>• Improve the domestic marketing on all levels</li> <li>• Start the implementation of the results of the assessment of the General Company for Fruit and Vegetables</li> </ul>	= = = =	
<b>C- International Trade Policies</b>	<b>c.1- International Trade</b>	<b>c.1.1-</b> Produce an export surplus of the products that enjoy a comparative advantage; Enhance these products' competitiveness; Produce the proper quantities and qualities according to the marketing windows	<ul style="list-style-type: none"> <li>• consider the requirements of foreign markets in terms of quantity, quality and marketing windows</li> <li>• select the most appropriate areas for the production of export crops</li> <li>• Carry out experiments to introduce the required crops <ul style="list-style-type: none"> <li>▪ Adopt new varieties that meet the requirements of foreign markets and determine the planting timing that is most appropriate to the marketing windows;</li> </ul> </li> <li>• Produce competitive advantage crops and enhance their competitiveness</li> </ul>	= = - - -	
		<b>c.1.2-</b> Develop the domestic and <b>international</b> mar-	<ul style="list-style-type: none"> <li>• remove export restrictions</li> <li>• adopt the export promotion</li> </ul>	= =	

		keting activities	<p>measures</p> <ul style="list-style-type: none"> <li>• identify the control agency and establish labs that give quality certificates to producers</li> <li>• Remove all types of taxes and fees on exported agricultural products</li> <li>• Conclude bilateral, Arab and international agreement to facilitate agricultural trade flow and obtain preferential treatment for the agricultural exports.</li> </ul>	- ? =	
		<b>c.1.3</b> -Develop the post harvest practices, improve the products quality and control loss and waste (***)	Establish a market information system to provide producers and exporters with the required information on the foreign market prices qualities and market windows	-	
<b>D- Institutional Oriented Policies</b>	<b>D1- Research</b>	<b>D.1.1</b> -Develop the agricultural research strategy, restructure the research programs and focus on modern research techniques	<ul style="list-style-type: none"> <li>• assess the current situation of the agricultural research to identify the strengths and weaknesses and design a future vision</li> <li>• develop a clear strategy for agricultural research</li> <li>• restructure the scientific research and prioritize the research areas</li> <li>• Develop the executive programs of work taking into account the vertical and lateral expansion</li> <li>• expand research activities and apply modern methods like ge-</li> </ul>	= = = = =	

			netic engineering and tissue culture		
		<b>D.1.2</b> -Establish modern research centers equipped with the research requirements	<ul style="list-style-type: none"> <li>• determine the different specialized research areas according to the type of production and activity in each area</li> <li>• start the utilization of specialized research centers on crops, fruit, vegetables, protected crops, livestock, irrigation, land and forest research</li> <li>• Develop the livestock research stations (cattle, sheep and goats)</li> <li>• Develop and expand the specialized centers to cover both plant and livestock products</li> <li>• Establish research stations connected to the specialized ones to contribute to their work</li> <li>• Continue the development of research stations in different agricultural areas.</li> </ul>	= = = = = = =	
		<b>D.1.3</b> -Develop the genetic resource conservation process	<ul style="list-style-type: none"> <li>• Develop and expand the genetic resource conservation centers</li> <li>• Establish genetic resource banks</li> <li>• Develop scientific research in the field of genetic engineering and tissue culture.</li> </ul>	= = =	
		<b>D.1.4</b> -Organize	<ul style="list-style-type: none"> <li>• Issue the establishment decree</li> </ul>	=	

		and develop the agricultural research, issue the Agricultural Scientific Research Commission establishment decree to encourage researchers and benefit from the expertise in the field of agricultural research	<p>of the Agricultural Scientific Research Commission and set the future work mechanism</p> <ul style="list-style-type: none"> <li>• Restructure the agricultural research institutions</li> <li>• Attract the qualified researchers from different levels</li> </ul>	=	
		<b>D.1.5</b> -Train the agricultural researchers	<ul style="list-style-type: none"> <li>• study the requirements of the agricultural sector in terms qualified staff and securing fellowships for 25 beneficiaries/year up to 2003 and for 50 beneficiaries / year up to 2005</li> <li>• Conclude cooperation agreements with research centers to ensure the sustainability of post graduate and other types of external training</li> </ul>	=       <b>NI</b>	
	<b>D2- Extension</b>	<b>D2.1</b> -train agricultural engineers and help them implement the extension research programs	<ul style="list-style-type: none"> <li>• Design specialized extension programs on the crop level</li> <li>• Provide the required inputs to develop these programs and enhance interaction with producers.</li> <li>• Organize training courses for extension agents and provide them with reasonable incentives</li> </ul>	=       <b>NI</b>	
		<b>D.2.2</b> -increase the	<ul style="list-style-type: none"> <li>• Support the extension units</li> </ul>	-	

		number of extension units and supply them with the required inputs	<p>with extension agents, transport means and other equipment</p> <ul style="list-style-type: none"> <li>• Increase the number of extension units by 15/year up to 2003 and 20/year up to 2005.</li> <li>• Provide lodging for 10 units;</li> <li>• Provide the equipment needed (projectors, TVs, videos, etc);</li> <li>• Supply each unit with one vehicle at least.</li> </ul>	=  <b>NI</b> <b>NI</b> -	
	<b>D3- Training</b>	<b>D.3.1</b> -Develop the training centers and provide them with the required equipment and establish modern training centers in the rural areas	<ul style="list-style-type: none"> <li>• Provide the required equipment to the training centers in Damascus, Dar' a, Homs such as new teaching classes and services (study rooms, restaurants, lodging, and audio visual aids).</li> <li>• Establish specialized training center in main production areas</li> </ul>	=   <b>NI</b>	
		<b>D.3.2</b> -Establish agricultural high schools and institutes and support them with the required labs and audio visual aids	<ul style="list-style-type: none"> <li>• Establish 9 intermediate institutes (3 up to 2003 and 6 up to 2005).</li> <li>• Establish 4 high institutes for different specialization to give 3 years training courses (.....)</li> <li>• Establish 25 labs for the institutes and high schools and in addition to the required audio visual aids (.....)</li> <li>• Provide a vehicle to transport the trainees from and to the schools and to the training fields</li> </ul>	--  -  --  --	

	<b>D4- Institutions</b>	<b>D4.1-</b> Give priority to the agricultural sector compare to other sectors and increase the investments	<ul style="list-style-type: none"> <li>• Increase the agricultural investments allocated for service projects at an annual rate of 25% for research, education and extension and 20% for other projects</li> </ul>	NI	
		<b>D.4.2-</b> Identify the role played by the private, public, co-operative and joint sectors within the framework of economic diversification	<ul style="list-style-type: none"> <li>• Modify the roles assigned to economic establishments to focus on research and extension rather than production and modify their establishment decrees accordingly</li> <li>• Promote private and joint sectors contribution in agricultural investment, particularly through the establishment of specialized marketing companies.</li> <li>• Promote the establishment of producers units</li> </ul> <p>Establish a public export agency to open new markets and control exports</p>	-  NI  NI	There some information in the previous sections to be considered
		<b>D.4.3-</b> Eliminate responsibility fragmentation among different ministries and institutions involved in agriculture	<ul style="list-style-type: none"> <li>• Review and improve the work mechanism and affiliation of the institutions involved in the agricultural production such as seed processing units, sugar plants and dairy plants</li> <li>• Adopt the review results in improving the work of the agriculture-involved institutions with the aim of maximizing the re-</li> </ul>	-  -	

			turns and improving the services provided to agriculture		
		Reconsider the finance policies	<ul style="list-style-type: none"> <li>• provide the agricultural sector with the required loans in consistent with its role in the production process</li> <li>• increase the agricultural loans by 12%/year of the total loans</li> <li>• Increase the long term share by 5% for the establishment of the production base</li> <li>• increase the ACB capital and expand its operations <ul style="list-style-type: none"> <li>▪ Improve the loaning process and reduce the document work;</li> </ul> </li> <li>• Automate the loaning work</li> <li>• Increase the long term loans to reach 10%</li> </ul>	- - - - - - - - -	
<b>E- Natural Resources Conservation and Rural Development Policies</b>	<b>E1- Land</b>	<b>E.1.1-</b> Optimal utilization of cultivable land and adoption of crop structures and agricultural rotations that guarantee sustainable production	<ul style="list-style-type: none"> <li>• Set the crop rotations suitable for the current crops and seeking alternative crops <ul style="list-style-type: none"> <li>▪ Modify the crop rotations and start planting some alternative crops;</li> </ul> </li> <li>• Introduce alternative crops in the crop rotations and studying the feasibility of each rotation according to the agro climatic zones</li> </ul>	= - -	
		<b>E.1.2-</b> Mountainous and hilly land reclamation and planting with adaptable fruit trees and crops	<ul style="list-style-type: none"> <li>• operate the reclamation machines in different development and reclamation projects <ul style="list-style-type: none"> <li>▪ Improve the reclamation process</li> </ul> </li> <li>• Utilize the rocks resulting from</li> </ul>	- -	

			<ul style="list-style-type: none"> <li>the reclamation process.</li> <li>reclaim 33000 ha/year</li> <li>Plant 24000 ha for fruit trees and 9000 ha for crops</li> </ul>	<b>NI</b> - -	
	<b>E2- Water</b>	<b>E.2.1-</b> Expand the area irrigated from surface and replenishable sources and improve the efficiency of public irrigation systems	<ul style="list-style-type: none"> <li>increase the public system irrigated land at an average of 20000 ha/year</li> <li>Increase the irrigation efficiency in the public irrigation systems by 20%.</li> </ul>	- --	
		<b>E.2.2-</b> Rationalize water use through the adoption of modern irrigation systems, control water over exploitation, improve water return and expand irrigated area to the maximum possible level;	<ul style="list-style-type: none"> <li>provide the required loans for funding the modern irrigation investment</li> <li>convert 50% of the irrigated area to modern irrigation</li> <li>start the rehabilitation program of old systems</li> </ul>	= -- <b>NI</b>	
	<b>E.3- Forests</b>	<b>E.3.1--</b> develop the forest area	<ul style="list-style-type: none"> <li>increase the forest area for 4% per year up to 2003 and for 5 % up to 2005</li> </ul>	--	
	<b>E4- Al Badia</b>	<b>E.4.1-</b> Al Badia development and restoring the vegetation cover and provision of the water required by the population and livestock	<ul style="list-style-type: none"> <li>provide the machines required for Al Badia development</li> <li>establish wells in some areas to replace dry ones</li> <li>conserve steppes from deterioration through the adoption of an appropriate grazing system</li> <li>increase the pastoral seedlings up to 15 million/year</li> <li>produce 80000 tons of pastoral</li> </ul>	-- = <b>NI</b> --	

			seeds and increase the direct sowing area <ul style="list-style-type: none"> <li>• Protect 300000 ha/year with the aim of improving the vegetation cover in Al Badia             <ul style="list-style-type: none"> <li>▪ organize grazing in 300000 ha on natural steppes;</li> </ul> </li> <li>• Plant 50000 ha/year for seedlings or by direct sowing.</li> </ul>	- - - - <b>NI</b> +	
	<b>E.5- Infrastructure</b>	<b>E.5.1-</b> Establish the required infrastructure to provide the product and input transport and other facilities	<ul style="list-style-type: none"> <li>• Enhance the support services such as the establishment of 1000 km/year of agricultural roads to service 200000 hectares</li> <li>• Establish wholesale markets in the Syrian governorates</li> <li>• Develop other support services and information systems</li> </ul>	+ - <b>NI</b>	

(\*) here, both actions to 2003 and 2005 are considered

(\*\*) In the assessment a 5 class evaluation is adopted, namely:

+ +: achievement well above the target/ goal

+ : achievement above the target/ goal

= : achievement on the target/ goal

- : achievement below the target/ goal

- - : achievement far below the target/ goal

(\*\*\*) the title of this objective has been changed into establish a market information system.