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## **Introduction**

Under the auspices of the Minister of Agriculture and Agrarian Reform, the National Agricultural Policy Center (NAPC), supported by the FAO Project GCP/SYR/006/ITA - Phase II "Assistance for Capacity Building through Enhancing Operation of the National Agricultural Policy Center", organized the 3<sup>rd</sup> National Agricultural Policy Workshop at Cham Palace, Damascus, on 1 July 2004.

The Workshop was organized to discuss the results of two major studies conducted at the NAPC with the support of the FAO Project: "Farming Systems in the Syrian Arab Republic" and "Comparative Advantage of Selected Syrian Commodity Chains".

The first study analyses the geographical and socioeconomic differentiation of Syrian agriculture. It provides a characterization of the Syrian farming structures and the prevailing agricultural households in different areas of the country with the objective of providing a baseline for informed government interventions in the agricultural sector. The study includes an assessment of the ability of representative farmers to respond to changing environmental and market conditions that can be of special interest in defining new forms of public intervention able to foster agricultural development in the emerging economic environment.

The study on Comparative Advantage of Selected Syrian Commodity Chains assesses production efficiency and competitiveness on international markets of some key agricultural products. It lays the foundation for the formulation of agricultural and trade policies able to successfully integrate Syrian farmers in the international markets, in line with the Syrian Government endeavor to enhance his participation in the global economic system.

The Workshop also provided an occasion to promote the debate on the challenges and opportunities related to Syria's accession to WTO, with a view at promoting awareness of accession requirements and enhancing preparedness for successful negotiations on the base of the analytical work that is being conducted at the NAPC with the support of the FAO Project GCP/SYR/006/ITA - Phase II.

The Project, jointly implemented by the Food and Agriculture Organization of the United Nations and the Syrian Ministry of Agriculture and Agrarian Reform counting on generous financing from the Italian Government, contributed to the realization of the 3<sup>rd</sup> National Agricultural Policy Workshop as a stocktaking event in the move from the nursing to the consolidation phase of the NAPC. Indeed, the event marked the conclusive stage of the second phase of Project activities and the turning tuning point into its third phase, which is due to start in October 2004 to contribute to the "Sustainable Capacity Consolidation of the National Agricultural Policy Center". During the Workshop two books recently published as outcome of this successful undertaking in international cooperation were presented: "Syrian Agriculture at the Crossroads" and "Syrian Agricultural Trade 2003".

Attendance to the Workshop (see list of participants in Annex 1) included policy makers and public officers from all main departments of the Ministry of Agriculture and Agrarian Reform, other Ministries and various Public Establishments, Members of the Parliament, scholars from various Universities, stakeholders from the private sector, representatives of various professional and nongovernmental organizations, and representatives of International Organizations and Embassies.



## **Opening Ceremony**

The Workshop was opened by welcoming statements of H.E. Mahmoud Mohamed Taher, FAO Representative in Syria, H.E. Francesco Cerulli, Ambassador of Italy, and H.E. Adel Safar, Minister of Agriculture and Agrarian Reform.

H.E. M. Mohamed Taher, FAO Representative in Syria, expressed his honor in participating in the inauguration of the 3<sup>rd</sup> National Agricultural Policy Workshop and underlined that the Workshop came within the FAO efforts to enhance capacity in the analysis, formulation, implementation, monitoring and evaluation of the national policy in the area of food, agriculture, and rural development. In this regard, he stressed that the technical assistance provided by FAO to consolidate NACP as an institution specialized in applied agricultural policy analysis, is framed within the FAO commitment to support the modernization and development process of Syrian agriculture through enhancing in a sustainable manner technical and institutional capacities.

Mr Taher praised the generous financial support of the Italian Government that provided the funding for the implementation of the past, current and next phases of the FAO Project GCP/SYR/006/ITA. He also took the chance to welcome H.E. Francesco Cerulli, the new Italian Ambassador in Syria, thanking him for the attention he is paying to this Project. In this respect, Mr Taher also expressed deep appreciation to the former Ambassador, H.E. Laura Mirachian, for the support she provided to the FAO activities in Syria, especially those related to agricultural policies.

He remarked that the organization by the NACP of the 3<sup>rd</sup> third National Agricultural Policy Workshop, after the two events organized by the FAO Project in 2000 and 2002, is a factual evidence of the progress made in establishing a national institution able to assume a central role in promoting public awareness and dialog on the challenges faced by Syrian agricultural development. Meanwhile, the studies presented in the Workshop show the growing potentials of NACP in the area of research and analysis based on the solid technical basis acquired with the technical support provided by FAO.

Mr Taher continued his intervention introducing the studies and the publications to be presented, inviting the participants to contribute in the discussion and addressing the Workshop as a floor to exchange views with the aim of enriching the studies' outcomes taking into account the visions of policy makers and other stakeholders. In this regard, he wished the Workshop to be a fruitful occasion to further enhance the common understanding of the main issues related to the Syrian agricultural development.

Mr Taher concluded by expressing his gratitude to H.E Adel Safar, Minister of Agriculture and Agrarian Reform, for the efforts he is making to support the agricultural development process and, specifically, the FAO Projects being implemented in Syria.

The Italian Ambassador, H.E. Francesco Cerulli, welcomed the participants remarking the efforts that the Syrian Government is making to favor Syrian involvement in international trade. He recalled that, in the process of an opening towards the world market and liberalizing trade, Syria became a member of the Great Arab Free Trade Agreement (GAFTA), it has applied for membership to the World Trade Organization (WTO) and is on the verge to sign an Association Agreement with the EU. In this regard, he remarked how much such efforts need to be accompanied by structural changes, while policies have to be shaped so that Syria can be ready to face international competition.

The establishment of the NAPC is part of the process enabling Syria to face the challenges of a free market environment. In this respect, H.E. the Ambassador of Italy reminded that the Government of Italy with pleasure responded to the request of assistance coming from the Syrian Government. Indeed, the Italian funded Project GCP/SYR/006/ITA, implemented by the Food and Agriculture Organization of the UN, is an example of the Italian Government support to Syrian undertaking in agricultural policy reform. The Italian support covers all areas of Syrian agriculture, from institutional building to the improvement of agricultural processing. Other areas of cooperation that represent important part of the Italian support to Syria are the improvement of the irrigation systems and the safeguard of the environment.

The Ambassador concluded his intervention mentioning that, in the framework of a new agreement between Italy and Syria for the financing of new projects, agriculture will remain a pillar of future cooperation.

H.E. Adel Safar, the Minister of Agriculture and Agrarian Reform, welcomed the audience to the Workshop, hinting at the value in the Syrian agricultural development of the three studies that were about to be discussed. He wished the findings of the Workshop to be helpful in drawing strategies for Syrian agriculture to make it play a better role in the comprehensive sustainable development of the country. He also praised the well-timed organization of the Workshop, in a period in which the Ministry of Agriculture and Agrarian Reform is focusing on defining agricultural policies mechanisms and reshaping its structure.

The Minister mentioned the changes occurring worldwide that turned the existence of economic blocks into a process towards globalization. In this regard, he remarked that this shift calls for quick actions to be especially taken by developing countries that need to adopt new policies in order to achieve food security and to focus on the production of crops in which they have a comparative advantage.

Furthermore, the Minister highlighted how the modernization of Macro and Micro policies in Syria is responding to the requests for a new global economic environment, mentioning that the government is gradually shifting to a more market oriented economy, without giving up its essential role in managing resource allocation. He stressed the importance of agricultural policies as an effective tool to achieve food security, recalling that Syria attained food security by targeting the Government intervention on strategic crops, favouring the exports of valuable agricultural commodities. He also referred to the importance of the development projects implemented to foster land reclamation, women empowerment and credit provision.

Furthermore, the Minister also referred to the numerous agreements between Syria and other countries, to the efforts made in order to finalize the Syrian European Association Agreement, and also to the Syrian request of WTO membership.

He concluded his intervention thanking the Italian Government for its financial support, and the FAO for its critical role in improving the food situation both in Syria and worldwide. He then acknowledged the role of the NAPC in the country as a promoter and coordinator of researches, communication, and debate on agricultural policies and expressed his wishes for the Workshop to contribute to Syrian agricultural development with the final objective of improving the living standards and welfare of people working in the sector.

## Introductory Session

Following the opening ceremony, Mr Atieh El Hindi, Director of the NAPC, presented two recent publications: the book “Syrian Agriculture at the Crossroads” and the 2003 issue of the periodical publication on Syrian Agricultural Trade.

*Syrian Agriculture at the Crossroads* collects a set of studies conducted at the NAPC by high-level international experts with the support of the FAO Project GCP/SYR/006/ITA. This publication, published by the FAO under its Agricultural Policy & Economic Development series, provides key references to policy makers and practitioners for research and policy making related to Syrian agricultural development. The editors of the volume, Mr. Jacques Vercueil, Senior Project Adviser, and Mr. Ciro Fiorillo, Project Chief Technical Adviser, structured it in three parts. Part One illustrates the contribution of the agricultural sector in the national economy through papers on agriculture in the syrian macroeconomic context; trade and agriculture with special reference to the association agreement with the european union; private investment and agribusiness; food policies in syria; and agricultural policy and environmental issues with special reference to rangeland grazing and soil management. Part Two analyzes the economics of the main sub-sectors in agriculture and includes extensive summaries of studies carried out on the crops considered “strategic” under Government planning, i.e., cotton, wheat, lentil, chickpeas, barley, tobacco and sugar beat; olive and olive oil; citrus; livestock; processing and marketing issues are analyzed with particular reference to the dairy and horticulture sub sectors. Part Three examines the structural and institutional factors and inputs for agriculture production and includes papers on the structural and distributional features of agriculture producers: land tenure and labor relations; irrigation water policies; agricultural inputs and market liberalization; inputs and credit supply and distribution systems.

In addition to the above, Mr. El Hindi presented another recent publication, the *Syrian Agricultural Trade 2003*, prepared by NAPC researchers in cooperation with FAO international experts. The *Syrian Agricultural Trade 2003* intends to be a source of information and a tool for decision makers to consolidate Syria’s internal reform process, increase its outward orientation, build up a network of bilateral and multilateral agreements, promote trade liberalization and, thus, accelerate the country’s economic development. This report includes five chapters, the first two focuses on general and agricultural world trade and related policies, hinting at the experience of the EU and the USA. The third chapter analyzes Syrian agro-food trade trends. It also identifies the country’s new agricultural trade partners and traces a classification of the most suitable products for export. In addition, it provides variables and indicators allowing to asses the adaptation of Syrian products to world demand changes and to measure the degree of exports diversification. The fourth chapter reviews recent changes in institutions and policies as well as negotiation and implementation of preferential agreements of relevance for agricultural trade. The last chapter is devoted to the description of the rules governing the accession process to the WTO. This information is meant to provide technical background to Syria’s request of adhesion to the organization and to be functional to a further progression of the country’s integration into the global trading system.



## Farming Systems in Syria

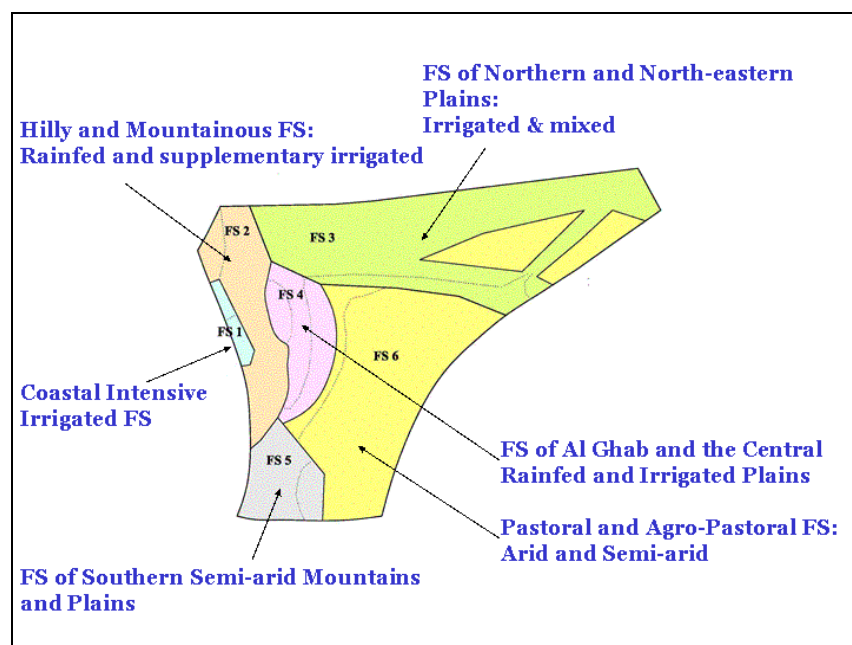
Mr J. Vercueil, Senior Project Adviser of the FAO Project GCP/SYR/006/ITA - Phase II, chaired the session on Farming Systems in Syria. He introduced the speakers, Ms S. Al-Zoughbi and Mr R. Hamzeh, NAPC researchers, and Mr H. Wattenbach, FAO consultant supervising the Farming Systems Study, stressing the validity of the research carried out at the NAPC and remarking that such a study was the first of this kind conducted in Syria.

The justification and purposes of the study were presented by Ms Al-Zoughbi, followed by an overview of the Syrian farming systems, given by Mr Hamzeh that then focused, as an example, on the characteristics of one specific farming system. Mr Wattenbach closed the presentation providing a comparative overview of the Syrian farming systems and highlighted some considerations on key policy issues.

The NAPC identified six major farming systems in Syria to provide policy makers with a better understanding of the geographic differentiation of the agricultural sector and of the socio-economic characteristics of rural households and their different exposure to policy changes. Ms Zoughbi addressed the participants on the distinctive characteristics of a farming system that result from a specific combination of natural and socio-economic factors, supplemented by the infrastructures provided by public intervention. Within a farming system, rural households locally adjust their income sources and livelihood opportunities to the possibilities given by their farm resources under consideration of their vulnerability to ecological and market risks. Each household type responds differently to policy changes. Therefore, the aggregation of responses by household type at regional level (Farming Systems) allows to link economic policies to household performances and strategies.

Ms Zoughbi continued her presentation by explaining the methodology applied in the Farming Systems Study. Major farming systems boundaries, as well as sub-systems and eventual niche systems were identified on the basis of secondary data, such as the agro-climatic zone, the type of irrigation and the socio-economic conditions (see figure 1). 29 field missions, for a total of 327 days in the field, were conducted to select representative Mantikas and villages, define household types, assess household characteristics and quantify farm economic aspects. At local level, households were classified according to their size, income sources, technology level and resource endowments.

**Figure 1:** Overview of Farming Systems



The characteristics of the farming system of the Northern and North-Eastern Plains were presented as an example of what in detail such a study can provide to policy makers. The household analysis by household type (poor, medium, better-off) at sub-system level was presented (share of household type, income sources, cropping pattern, changes over the last decade) and the strategies, as well as the vulnerability (to climate, price shocks, policy changes) of the different household types were displayed. In this regard, the speaker illustrated how much poor households dominate the system (about 50%) also noticing the relevant share in their income coming from off-farm sources. Indeed, it was clarified that the contribution of off-farm income to household livelihood decreases with the focus of the analysis shifting from poor households, to medium and better-off households. Mr Hamzeh stressed that the study also investigated the strategies preferred by each household type for their future development. The survey conducted by the Farming Systems Study team considered the following as strategies to be taken into account: intensification, diversification, expansion, off-farm work, and exit from the agricultural sector. Notably, with regard to the sub-systems of FS3 (Northern and North-eastern Plains) no household type (either poor, medium or better-off) considered off-farm work or exit from the agricultural sector as feasible strategies for the future. Furthermore, the speaker presented two tables (one per sub-system) illustrating the vulnerability to external factors (climate, price shocks, policy changes) comparing poor with better-off households at sub-system level (see figure 2).

**Figure 2:** Poor and Better-off households vulnerability (FS3, sub-systems level)

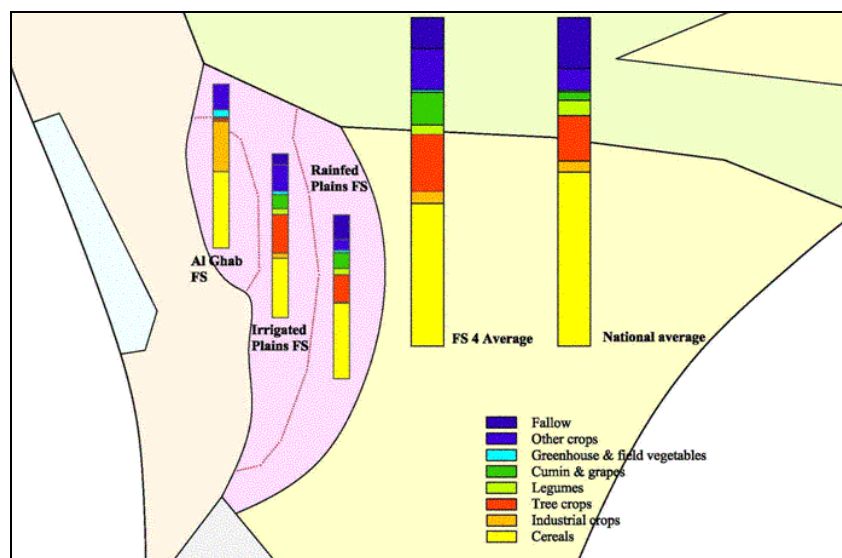
Irrigated s-sys		Mixed s-sys	
Poor	Better-off	Poor	Better-off
Climate	Climate	Climate	Climate
Pr. Shocks	Pr. Shocks	Pr. Shocks	Pr. Shocks
Pol. change	Pol. change	Pol. change	Pol. change
Major crops		Major crops	
Wheat, cotton, cumin, lentil		Cotton, wheat, sugar beet	

Width of circles = vulnerability relevance

Mr Wattenbach clarified that the definition of major farming systems and sub-systems allows a clearer perspective on the geographical differentiation of agricultural production. The key role of large systems (like the one of the farming system of the Northern and North-Eastern Plains) to national production is obvious, simply for the size of the system. However, also small farming systems and niches can be important at the National level (as the greenhouse production in the Coastal Intensive Irrigated Farming System). At the same time, a farming system may depend on specific crops contributing to a small share of the national production. In such cases, the impact on the farming system of changing crop-related policies would be strong, but the effect would be little noticeable at the National level. In this regard, the average holding size and share of cultivated land under the major crop groups provides first information on the production structure and potential vulnerability of the farming systems. Indeed, different holding types, i.e. socio-economic groups within a farming system, show a remarkable differentiation of their livelihood and cropping pattern. Of these features, the speaker provided some visual examples that clarified how deeply a farming systems study can go in the understanding of the local characteristics of agricultural activities. The shares of crop groups in the cultivated land between

the major farming systems was presented, as well as the share of cultivated land under strategic crops, the differences in average holding size. He stressed that the general picture given by the examples is no surprise to experts, but a presentation of statistical information based on farming systems instead of Governorates (as used in most statistics) considerably improves such a picture. Furthermore, Mr Wattenbach noticed how the understanding of the dominance of major cropping groups by farming system and their vulnerability to different factors of stress (price shocks, climatic risks, policy changes) helps in noticing the vulnerability and resilience of farmers at local level. The examples presented culminated in some evidences he provided about the Farming System of Al-Ghab and the Central Rainfed and Irrigated Plains, also showing how further in depth the analysis can go. In this farming system the importance of major crop groups is remarkably similar to the national average. Though, considering the sub-systems, Al-Ghab has a very different structure best reflected by the high dominance of industrial crops (see figure 3). Therefore, households in Al-Ghab would be impacted by and react to factors of stress in a much different way than could be expected by the plain consideration of the average/broader figures.

**Figure 3:** A close look on Al-Ghab sub-system



The speaker followed his presentation noticing that household vulnerability to and perception of risks influence their vision of possible development strategies. In this regard, he further refined on the evidence already presented by Mr Hamzeh addressing the audience to the consideration that the development potential for a household type within a farming system is actually related to a dynamic economic environment and to institutional arrangements. Hence, despite poor households disregard off-farm work or exit from the sector as valuable strategies, they actually find in off-farm work and remittances from those of the household that exited the sector the best part of their sources of income.

On this consideration, Mr Wattenbach addressed the audience noticing that the Farming Systems Study allows policy makers to understand which development strategies are most viable for the different household types, which strategies are most viable within different farming systems and which policy support is required to foster such strategies.

Finally, he brought to the attention of the participants some specific policy issues that emerged from the study and should be of concern to policy makers for their considerable impact on the development potential of the different farming systems within the Syrian agricultural sector. In particular Mr Wattenbach referred to the following:

- Liquidity constraints are a serious problem, particularly for poor farmers. These affect seasonal production possibilities where they have lost access to formal credits for not

repaying earlier loans. Informal credit markets provide presently the only available solution, but they are expensive, as the creditor operates under high risk. The solution should be to provide competing credit facilities.

- Similarly unfavourable for poor farmers is the land tenure regime is unfavourable, due to the complexity of tenure registrations and ownership transfer for agrarian reform land. In this regard, it should be avoided that farmers seek informal arrangements, while an exhaustive regulation should be endorsed. Favourable to poor farmers are instead investments in industrial crops since these crops cultivations provide stability of income and employment.
- Water fees and water use efficiency should be connected. Beside, water fees levied per m<sup>3</sup> would support other policies promoting modern, water saving irrigation techniques. Indeed, improving water use efficiency in rainfed agriculture deserves more attention, as it requires less public support than irrigation and contributes to risk reduction in farming systems suffering from high climatic risk.
- Timely and accurate price and market information correct asymmetric information and help smallholders in producing free marketed crops as part of their strategies. In this regard, Extension Units play a dual role. They are the local outreach of MAAR to communicate the agricultural plans and follow them up, i.e. Extension Units have an administrative and control function, in addition to their traditional advisory role. Noticeable is that where industrial crops play an important role, the administrative function restricts the advisory capacity. Instead, in farming systems dominated by free market crops, extension units are most successful in promoting better farming practices, particularly where extension agents are farmers themselves.

Mr Wattenbach concluded his presentation thanking for their excellent job all the members of the NAPC researchers that formed the Farming Systems Study team and Mr M. Al-Ashram, national consultant. The team, in addition to Mr Hamzeh and Ms Zoughbi, was composed by Mr A. Sahadeddin, Mr A. Shhaideh, Mr F. Yassin, Mr H. Al Mojahed and Mr M. A'Sayyed.

## **Discussion**

The presentation was followed by a discussion that allowed to complement and clarify the issues addressed during the presentation.

Some questions and comments from the audience called for further clarification on the household classification, village sampling methods and farming systems boundaries identification. In this regard, the speakers clarified that the categorization of household was based on the information initially gathered discussing with village authorities and the extension units, refined during the group discussion with farmers. These group discussions also allowed to gather evidences on the changes in the farming systems as well as in the livelihood sources and cropping pattern by household type. The sampling of villages and households was addressed as principally a stratified sampling process, whereby large sample sizes were replaced through an iterative process. The grouping of farming systems was primarily based on expert knowledge and literature, while at the level of sub-units, the number of required differentiation was refined as a result from the field study. The number of selected villages was tentatively determined on the base of the rule that at least two villages were to be selected for each sub-system. The specification of representative villages was based on proposals from the Departments of Agriculture at the Governorate level, whereby several proposals were requested and the village location was revised based on the information of village characteristics and their location on maps in order to avoid roadside bias, extremes in village sizes etc. The households were invited to the group discussion based on information from the village authorities making sure to cover the different household types on the base of the already developed household classification, so to ensure the consideration of all the socio-economic groups in the information collection process.

Another set of questions/comments from the audience focused the attention of the speakers on the need to complement on issues pertaining the economy of the households. They clarified that farm economic quantification was mostly limited to the gross margins of crop and livestock, while a full farm income analysis was not carried out, as revealing such detail on the farm income would most certainly not have yielded high quality information from a single visit. In cases where crop income contributes to the vast majority of household income, however, some indications on the total farm income was estimated and in some group discussions, farmers themselves used farming income for classification. These were the exceptions, though, and the speakers stressed that should be treated with some care, as the concepts of cash income and the difference to net income was internally assessed by the farmers and some conceptual variation could have been underlying within the group. Total household income is therefore to be seen mostly as an order of magnitude.

Furthermore, the speakers agreed that the income from casual labour is often complementary to migration income, especially for landless farmers. Particularly in FS5 (Southern Semi-arid Mountains and Plains), families engage seasonally in share cropping arrangements for field vegetable production and the male family members migrate to neighboring countirs in the winter season to seek casual employment . The wage rates in such cases are difficult to compare, as field vegetable cultivation is prone to price and climate risks. Nevertheless, the sharecroppers interviewed in that system stressed the advantage of sharecropping arrangements as they allow the families to stay together, while migration implies separation of the families for several months.

Water related issues were also addressed during the discussion and the speakers stressed that such issues were of high concern in most farming systems and water access was frequently one of the elements of household classification. In the context of discussing recent trends and developments options, water related concerns were likewise important elements of the discussion. However, from the farmers' perspective, water conservation as such is not a primary concern and is secondary in importance to water access for crop production. Where water conservation is linked to increased production, such as in the case of the use of modern irrigation systems and for cost reduction, water conservation was raised as an issue during the group discussion. Some dissatisfaction was also expressed by farmers of FS3, for example, on the technical difficulties encountered during the early phases of using drip irrigation, while such concerns were not raised during discussion in FS5. In this regard, the speakers noticed that in FS5 drip irrigation is spreading in an area where wells provide the irrigation water for most farms and hence water savings directly affect production costs through the savings of pumping costs. At the same time, the size of irrigated area is directly linked to water use per hectare and the establishment of drip irrigation also allows farmers to expand the areas under irrigation, as in FS5 most crops are not strategic crops.

A final mention was given to demographic pressure issues an the speaker pointed out that in the course of discussing the development strategies by household types, given the population increase, the perspective on reducing farm sizes was an explicit factor taken into account. The individual household situation was included in the assessment of the group discussion participants. In this regard, past policy experiences and public system gave rise to some expectations on how the situation might improve, particularly where expansion of irrigation networks and distribution of state farms raises the expectations of acquiring improved production possibilities or new land resources.



**Comparative Advantages of selected Syrian Commodity Chains**

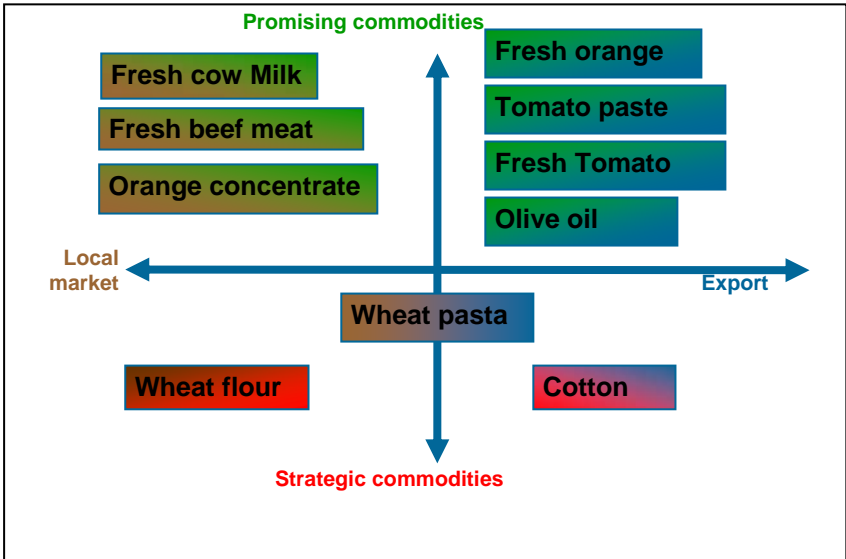
Mr Nabi Rasheed Mohammed, Deputy Minister of the Ministry of Agriculture and Agrarian Reform, chaired the session on Comparative Advantages of selected Syrian Agricultural Commodity Chains. He introduced the speakers, Mr H. Al-Ashkar, NAPC researcher, and Mr F. Lançon, FAO international consultant, remarking the importance for Syrian products to compete in the international market.

The presentation firstly clarified the scope of a Comparative Advantages (CA) study in Syria and its role as an exercise for capacity building at the NAPC. With regard to the scope of the study, Mr Al-Ashkar noticed that the gradual shift from a planned to a market oriented economy, opening to the international trade, put at stake the capacity of the Syrian agriculture to maintain its contribution along the entire set of functions it fulfills. Indeed, he observed that, in the last decade, Syrian agriculture has been able of a remarkable performance in terms of production growth, but the extend to which such a trend could be maintained in a more competitive environment, considering the increasing scarcity of natural resources (water in particular), also depends on the capacity to adapt to the opportunities of trade liberalization. Opening to foreign markets may benefit several commodity chains through a higher demand, but it also has consequences on the economic viability of other agricultural commodity chains. The assessment of the CA of selected agricultural commodity chains has been conducted to address these crucial issues, taking into account the impact of policy intervention on each commodity chain.

The speaker mentioned that the study was conceived as an on the job training in order to build within the NAPC the required capacity to further expand this type of analysis to a larger number of commodity. The study was conducted by six NAPC Researchers, under the supervision of two international consultants and the assistance of three national consultants from the MAAR, the Ministry of Finance and Trade and from GCEPT.

The selected agricultural products have been categorised along two major criterions (see figure 4): their current positions in the agriculture, distinguishing between strategic commodities (cotton and wheat) and promising commodities (orange, tomato, milk), crossed with the category of market that is currently targeted, local or export market. Furthermore, they have been selected to cover the major categories system: field crops, perennials and livestock production systems.

**Figure 4:** Selection of the commodities



This first classification has been further subdivided into representative systems of the commodity chains on the basis of the type of raw materials used (hard and soft wheat), the

cropping techniques in place (networks irrigated, wells irrigated or rainfed), the processing techniques, the export targeted markets (Regional market or the European market). A total of 28 systems have been retained for the analysis (see box 1).

**Box 1: Selected representative systems**

<p><b>Cotton</b>  <i>1a Lint cotton all</i>            1 Lint cotton network irrigated            2 Lint cotton well irrigated</p> <p><b>Wheat Flour</b>  <i>3a Flour all</i>            3 Flour soft wheat network irr. large pub. mill            4 Flour soft wheat well irr. public mill            5 Flour soft rainfed irr. public mill            6 Flour hard wheat network irr. large pub. mill            7 Flour hard wheat well irr. large pub. mill            8 Flour hard wheat rainfed large pub. mill            9 Flour soft wheat network irr. small pub. mill            10 Flour soft wheat network irr. large pub. mill</p> <p><b>Wheat Pasta</b>  <i>11a Pasta low quality all</i>            11 Pasta low quality network irr.            12 Pasta low quality well irr.            13 Pasta low quality rainfed            14 Pasta high quality rainfed</p>	<p><b>Filtered olive oil</b>            15 Olive oil filtered centrifuge rainfed            16 Olive oil filtered hydraulic rainfed</p> <p><b>Tomato</b>            17 Tomato fresh open field regional mrkt.            18 Tomato fresh green house regional mrkt.            19 Tomato fresh green house European mrkt.            20 Tomato paste open field regional mrkt.</p> <p><b>Orange</b>            21 Orange fresh network irr. regional mrkt            22 Orange fresh well irr. regional mrkt            23 Orange fresh rainfed regional mrkt            24 Orange fresh network irr. European mrkt            25 FOCJ network irr.</p> <p><b>Livestock</b>            26 Fresh meat            27 Live animal            28 Packed milk</p>
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The tool used to assess the comparative advantage of these systems has been the Policy Analysis Matrix (PAM). The PAM (see table 1) consists in the comparison of two accounting entities (Income = Input cost + Factors cost + Profit), one being computed for a level of price observed under the current economic conditions (called private prices), the second being computed using the price (social price) that would prevail under perfect market conditions. The last line of the matrix is computed by subtracting social values from private values and represents the divergence between the current situation and the optimal situation. Those divergences are due to distortions attributed either, to policy affecting the level of prices (taxes, subsidy), or to market failure (monopoly, externalities) that prevent markets to allocate resources efficiently. Prices prevailing on the world market are taken as the reference for building the accounting entities under social prices.

**Table 1: The Policy Analysis Matrix**

	Revenue	Tradable Input	Domestic factors	Profit
Private prices	A	B	C	D
Social prices	E	F	G	H
Divergence	I	J	K	L

The PAM provides straightforwardly a range of indicators for assessing the efficiency and the comparative advantages of a system. If D is positive the system generates profit under the current policy and market conditions and is competitive. Similarly, if H is positive the system is able to generate profit without benefiting from subsidy or conversely being constrained by taxes, and the system is said to have a comparative advantage. If a system is benefiting from subsidy for input use, or has to pay a lower price for casual labor than it would have if the labor market was efficient, the system can be competitive (i.e. D>0), while having no comparative advantages (i.e. H<0).

The comparison of the PAMs, developed for different systems, relies on the computation of ratios that are scale, product and time independent in order to draw meaningful comparison. In this regard, the speaker illustrated the following ratios:

- The Financial Cost Benefit ratio (FCB), which is the value of the Domestic Factors against the difference between the Revenue minus the Tradable Input [ $FCB = C / (A - B)$ ]. If this ratio is above one, it means that the systems utilize more value of Domestic factors than the wealth created or the Value Added, then the system is not profitable. If the  $FCB < 1$ , the system is profitable; therefore the systems that are the most profitable are the ones that have the FCB closest to zero.
- The Domestic Cost Resources ratio (DRC) which provides a measure of the level of comparative advantages achieved by the selected systems [ $DRC = G / (E - F)$ ]. If the DRC is above one, the system has no comparative advantage, if it is below one the system has a comparative advantage, and the system is said to be economically efficient.
- The Nominal Protection Coefficient (NPC) which measures the level of protection for the tradable output by looking at the ratio of the revenue at private price above the revenue at social price ( $NPC = A / E$ ). A NPC above one indicates that the system benefits from a protection since it gets a higher revenue at private prices than it would get at social price; conversely, a NPC below one indicates that the main output is undervalued at private price resulting in a transfer of wealth from the productive system to the rest of the economy.
- The Effective Protection Coefficient ratio (EPC) compares the added value at private price to the added value at social price [ $EPC = (A - B) / (E - F)$ ] which gives a combined index of the level of trade distortion on both tradable inputs and outputs and provides a more accurate measure of the level of protection than the NPC. An EPC above one means that the selected system is protected while an EPC below one means that the system generates less added value at market price than it would at social prices.
- The Equivalent Producer Subsidy (EPS) which is a ratio of the total net transfer (L) above revenue at private price [ $EPS = L / A$ ] and provides a synthetic index of the divergence between the efficiency of the system at private price and at social price. It indicates the share of income gained (or lost) by the system due to divergence induced by the current policy or market distortions.

Following the introduction to the indicators Mr Al-Ashkar left the floor to Mr Lançon to present the results of the analysis. Mr Lançon, first of all, mentioned that, since the indicators computed from the PAMs rely on the comparisons of the value of tradable and domestic factors, the cost structure of each representative system has a determining impact on the value of these ratios and hence the relative performances of the selected systems. Tradable inputs represent the major share of the total costs for most of the systems, meaning that the level of custom duties on tradable input imports is an important factor of the profitability of the systems at social price, and hence the DRC achieved. In this regard, the speaker addressed the audience to note that for cotton and olive oil production labor is the major cost. For most of the systems with the exception of cotton lint produced from wells irrigated cotton, flour produced from wells irrigated wheat and the Fresh Orange Concentrate Juice (FOCJ), capital costs do not represent more than 20% of the total costs of the selected representative systems.

Mr Lançon stressed that under the current policy framework and market prevailing conditions, i.e. at private price, all the systems are profitable. At social price, however, irrigated network and wells irrigated cotton systems are not profitable ( $DRC > 1$ ) indicating that they don't have a comparative advantage. The same is observed for well irrigated hard and soft wheat. Instead, all the promising crops targeting exports, olive oil, fresh tomato and oranges, show a strong

comparative advantage while the crops responding to the expansion of livestock product on the Syrian market have no comparative advantage (FOJC, beef meat) with the exception of fresh packed milk.

The speaker also highlighted that the differences between the level of DRCs compared to the level of FCB at private price are mainly due to the effect of the policies in place that unequally support each commodity chains, in order to improve the profitability at private price of the less efficient ones. In this regard, it is worth noting that even the most efficient systems benefit from some protection. Only three systems show an  $EPC < 1$ , fresh tomato, oranges and tomato paste sold on the regional market, which means that these systems are actually taxed, directly or indirectly by the current policy and market setting, when (or if) they supply the selected market.

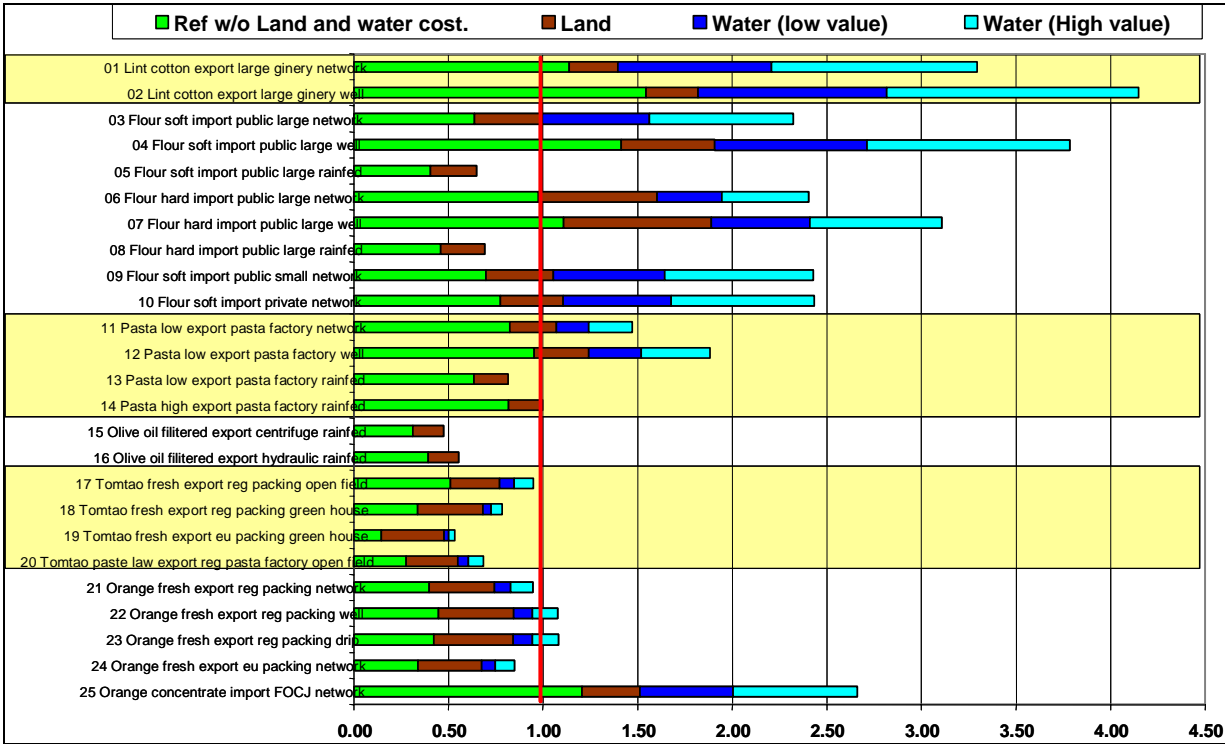
Being land and water the natural resource base of any agricultural activity, the speaker clarified that the first set of PAMs has been developed without inputting a price or a value to the utilization of these resources to simplify the computation procedure and to identify more easily any inconsistent technical ratio or prices used for the tradables, labor and capital cost.

To introduce land cost into the computation of the DRC, Mr Lançon clarified that it was decided to take as a reference the value of the usual share cropping contract rather the value of land rent, given the high segmentation of the land tenure market. The sharecropping system mentioned in the literature varies according to the crop: 15% of the value of the production for the land owner, and 20% for cereals. As no value was available for tomatoes and oranges a value of 30% has been applied, to take into account the rather more risky nature of these crops.

The method applied to find a proxy for the value of the water was to compute the residual value of the water once all other costs (including land cost) have been deducted from the revenues of each system. Then the ratio of these residual profits divided by the volume of water required by each system provides the maximum cost that can be supported by each system, otherwise the profit will be negative. The analysis has been conducted at as social prices since there is no market for water under the prevailing conditions (missing market). This first analysis clearly showed the very low efficiency of irrigated cotton and wheat systems, all of them losing money with or without inputting the land price, therefore remarking a negative value of the water use indicating that the utilization of water turn actually into negative value added. The others water based systems (irrigated oranges and tomatoes) obtained a positive value, meaning that the major issue in terms of water used efficiency concerned wheat and cotton irrigated systems. The opportunity cost for water for these two systems was taken as corresponding to the value of water forgone in the most profitable alternative crops that can be produced under equivalent conditions. Tomato being the only alternative for which we had data available, although using other major field crops (maize, barley, tobacco...) would be a better alternative, we assumed that a less intensive tomato cropping systems than the one surveyed in the south of Syria would be more likely in the major wheat and cropping area of the north. The water value computed for these low intensive systems was 6 SP; taking into account the higher agro-climatic and market risk attached to tomato cropping that is a perishable crop, we assumed that the actual value of water foregone by a farmer who decide to crop wheat or cotton rather than tomato would be of 3 SP/cm<sup>3</sup>. Another set of DRC was computed taking the value of 7 SP/cm<sup>3</sup> to assess the possible impact of a higher water value on the relative efficiency of the system analyzed.

The imputation of water value does not change the previous hierarchy established among the systems. Wheat and cotton irrigation based cropping systems DRCs exceed 2 with the highest opportunity cost of water (7 SP/cm<sup>3</sup>), while being already around 1.5 when the lowest value is imputed (3 SP/cm<sup>3</sup>). Wheat produced under rainfed condition remains below the 1 threshold. The position of other crops remains below one except for Fresh Orange produced with irrigated wells (see figure 5).

**Figure 5: DRCs value for selected systems with land and water value inputted**



Given the overall results of the analysis, the speaker clarified that the computation of the PAMs relies on a certain number of assumptions of estimation to cope with the lack, or the uncertainty pertaining to certain data. Therefore, in order to assess the robustness of the budget and the ratio computed to these estimations and assumptions a sensitivity analysis has been carried out for each systems. The parity price, i.e. the price that would prevail if there were no distorting policies or market imperfection, for the main output and the yield at farm level came clearly as the most influential factor on the DRC level. In this respect, the probability of each system to be efficient has been assessed, taking the variation of these two variables along the past decade on the basis of international and national statistics,

The results showed that cotton network irrigation systems would have a probability of 39% to have a comparative advantage, while the wheat production under the same systems could never have a comparative advantage. If we assumed a higher level of international price and yield, wheat irrigated network system can have a comparative advantage in 11 case out of 100, confirming the very low probability for these systems to have a comparative advantage under the prevailing technical conditions. All the other systems tested have 100% chance to have a comparative advantage, while the highly protected FOJC systems could compete without any policy support in 30% of the cases.

Following the analysis of data, Mr Lançon discussed some policy implications differentiating between macro-level issues, cotton and wheat and promising crops issues. Concerning the policy implications at macro-level, he noticed that all the selected representative systems benefit from a net transfer of resources from the whole economy. The major shares of the transfers of resources to the systems are caused by:

- Trade protection (tariff and non-tariff barriers) that increases the price of the systems' main outputs on the domestic market compared to the price prevailing on the world market.
- Subsidies and fixed prices for cotton and wheat.
- Non-accountability of the opportunity cost for natural resources (water).

On the input side the current policy generates limited distortions as the average level of custom duty applied on agricultural input imports is quite low. However it should be noted that important tradable inputs acknowledge a significant level of distortion:

- The fee paid for network irrigation utilization at private price represents only 1/3 of the total irrigation cost that would prevail at social cost.
- The low price of energy compared to the prevailing parity price for diesel on the world market price is an implicit subsidy to systems that are energy intensive.
- For agro-food industries, a high tariff on the imports of packaging device have an impact on the profitability of agro-food industries

For domestic factors, the current labor regulation does not have a significant impact on the systems' efficiency since a limited share of labor is employed on a permanent basis. Under the current level of knowledge, the study assumed that there is no imperfection on the labor market, but the evolution of the wage level for casual labor should be carefully monitored if new job opportunities arise on the domestic or regional labor market. The profitability at private prices and the efficiency at social price of commodity chains that are labor intensive relatively to the others, such as cotton and olive, could be significantly affected by such increase in casual labor costs. The lack of any mechanisms to incorporate water value at private prices is another source of transfers in favor of the water intensive systems such as cotton and wheat that are not able to cover these costs with the value added generated.

The impact of the exchange and interest rates variation depends upon the cost structure of the systems. Exchange rate variations have a limited impact on the systems efficiency given the high share of tradable (45%) on total cost which compensates the effect of exchange rate on the tradable output. Interest rate variations, alike, have a limited impact on the systems' efficiency due to the low share of capital (17%) in total cost.

Overall, Mr Lançon noticed that the results indicate that the current macro-economic policy framework is supporting the development of the selected systems.

Under the current level of technology and within the current trends of world markets' prices, irrigated wheat and cotton systems have a low probability to have a comparative advantage. The simulation done with the highest level of prices recorded in the past decades indicate that the probability would be still very low for the wheat systems to have a comparative advantage. The least efficient systems are the wells irrigated systems for both commodities which combine most of the distortions: subsidy, high cost in energy due to the pumping and higher volume of water uses because of the lack of any restriction. Rainfed systems have a comparative advantage, but there is no rainfed cotton and they roughly represent only 40% of the total wheat supply, and therefore have a relatively low weight for the overall efficiency of the wheat commodity chains.

The first option to enhance the comparative advantage of the wheat and cotton is to explore ways to improve the productivity through yield increase or costs reduction. Due to the rather high level of yield already achieved, one the most promising ways would be to improve the water use efficiency of the irrigated based cotton and wheat systems. Water use efficiency can be improved at short term by the dissemination of new irrigation technologies (drip irrigation) although the current study was not in a position to thoroughly assess the relative gain in economic efficiency that can be obtained by alternative irrigation technology. NAPC is finalizing a preliminary study on this subject, and this field should be further investigated. Another way that can be explored at mid-long term is the dissemination of new varieties that are less demanding in water for an equivalent yield level. The technical efficiency of the system can be also improved by looking at improvement at the post-harvest level. For instance the ginning output recorded for the ginneries (43 kg of lint cotton for 100 kg of raw cotton) is rather low compared to the ginning output achieved in other major exporting areas (38 kg of lint cotton for

100 kg of raw cotton). Therefore there is an urgent need to identify and exploit source of productivity increases at the post-harvest level.

Another option to respond to the low economic efficiency of the cotton and wheat commodity chains is to promote the utilization of the less costly systems in social terms: rainfed and network irrigation. Nevertheless, as already noted, the area available for rainfed and network systems is limited which would imply a net reduction in the cotton and wheat output as the national level. Furthermore, irrigated and rainfed systems do also have peculiar environmental costs that would have to be accounted for. While the wheat level of output should be in line with the food security objectives, it would be rationale on a short term to limit as much as possible the allocation of the wells irrigated land to cotton which is the least efficient.

The last option to reduce the social cost induced by wheat and cotton production is to promote crop substitution from cotton and wheat to promising crops, at least for the systems that are the least economically efficient. However, this crops substitution strategy would be constrained by the absorption capacity of the domestic and world market for the crops that are promoted, a factor that would be crucial given the huge areas targeted.

In any case, the mitigation of the high social cost induced by cotton and wheat production would likely rely on a combination of these options and would require the establishment of appropriate institutional mechanism to internalize the cost of water in the business plan elaborated at private prices of, cotton and wheat farmers to incite them to shift as much as possible to less water intensive crops.

Approaching the conclusion of his presentation, Mr Lançon remarked that Syria has certainly a comparative advantage for the production of olive oil, fresh tomato and oranges, but having a comparative advantage does not mean being able to export. Attention should be given to:

- Reinforcing the current policy for trade agreements to reduce barriers to entry.
- Quality issue: quality and sanitary issues are becoming more and more determining, even for standard quality product to access markets.
- Appropriate marketing strategy. Syria traditional markets are highly competitive and might become saturated. It is important to explore new market opportunities where habits are changing with income increase

The promising crops targeting the local market to respond to changes in food habit, such as beef meat, milk or FOJC, do not show any comparative advantage except for fresh packed milk. Although, the selected representative systems do not cover the entire diversity of technology encountered at farm level (cattle breed) or the existing institutional set ups (cooperative sector was not taken into account for beef production), it is likely that the current level of technology does not allow reaching a level of productivity required to have a comparative advantage. The promotion of new systems should carefully assess the viability of technical options within the Syrian economic environment. The low efficiency of the FOJC system is mainly due to the low conversion ratio at the processing level due to the unavailability of appropriate oranges varieties. The efficiency of the system depends also on the capacity of the Syrian agriculture to supply enough volume of juicy oranges to allow using the processing capacity at their optimal level.

Reaching the point of some conclusive notes, the speaker clarified that the economic efficiency should not be the only criteria for deciding whether or not a specific system should be supported or abandoned in terms of policy priorities. If there is no alternative for a system that has no comparative advantage, the cost of inefficiency should be put in perspective with the human costs of rural exodus and uncontrolled urbanization. When alternatives do exist, the PAM allows selecting the option that has the least social cost.

Beyond the computation of the indicators of comparative advantage, the PAM should be considered as a tool for policy dialogue to support discussion among policy makers but also with other stakeholders, especially with private entrepreneurs and farmers, to explore policy options. Given the increasing role of the private sector in the processing and marketing of Syrian agricultural based product, the involvement of the private sector in the establishment of an enabling policy environment is crucial to enhance economic efficiency.

Discussion with stakeholder can also improve the accuracy and the coverage of the information collected by presenting the results obtained and the assumptions made on certain technical issues and costs. The investment done in building the human capacity at the NAPC and in developing this first set of PAMs will be fully recovered through the establishment of a policy monitoring systems by focusing on:

- Increasing the number of commodities covered to explore possible alternatives.
- Developing a set of PAMs for major commodities by agro-ecological zone or governorate to take into account the spatial/ecological dimension of the comparative advantage.
- Developing a cost efficient mechanism to update the technical coefficients through an institutionalization of the process with appropriate services of the MAAR and other technical ministries (industry, transport...)
- Integrating the results on the comparative advantage with other analytical tools such as Farming Systems poverty mapping to better put into perspectives equity and efficiency.

## **Discussion**

Several questions address the selection of the products included in the study, claiming that they covered Syrian agriculture only partially or that the study should have focused on the crops that have a high probability of having a comparative advantage.

In this regard, it was pointed out that given the time availability for the study, it was necessary to focus on a limited number of products. Furthermore, the selection also considered the major type of activities (field crop, perennial and livestock) in order to develop analytical capacity at NAPC for the entire range of products likely to be analyzed. This study should be seen only as the initial step in a mid-term endeavor to assess and monitor policy impact on agriculture. Beside, while attention should be given to products that may exploit export opportunities, it is equally important to consider products that would have to compete with imports on the domestic markets since an improvement in foreign market accessibility cannot be achieved without opening the Syrian market to foreign competition.

Another set of questions and comments focused on the difficulty faced to find on the international market products that have the same attributes in term of quality of the Syrian agricultural products or by-products. Along the same line, it was also asked if the PAM allows taking into account the effect of the quality on the comparative advantage.

On these aspects the speakers clarified that the identification of equivalent products to compute the parity price can be rather challenging for certain categories of products that present a wide variety of quality (meat, wheat pasta, flour...) that is not clearly reflected in the world price or in the import unit price used as a reference for the parity price. The integration of quality attribute into the PAM does not present in itself particular difficulties as far as corresponding values can be obtained from market price quotations or from traders' practices.

The discussion also concerned the necessity to disseminate the results of the study among decisions makers.

In this regard, it was recalled that relevant stakeholders, including the members of the price committee, have been involved in discussing the study since the outset in order to take into consideration their comments and suggestions into the formulation of the study's objectives. Along the same lines, preliminary results have been discussed with selected stakeholders, while national consultants, coming from the public bodies involved in agricultural policy formulation, also contributed to the implementation of the study, providing valuable information and orientation for its realization.



## **Syrian Accession to WTO: Requirements and Opportunities**

The session was chaired by Mr Marcello Gorgoni, University of Rome, and included two speakers. The main lecture was presented by Mr Atieh El Hindi, Director of the NAPC, followed by a discussion by Mr Jose M. Alvarez-Coque, University of Valencia-UPV.

Mr El Hindi's lecture mainly referred to the analysis of the implications of WTO membership for Syrian agriculture, with focus on the steps to be taken for preparing the accession negotiations. The lecture started with a description of the WTO and a reference to the main developments that led to the creation of the WTO and its principles of transparency and multilateral and reciprocal trade concessions. In this regard, he stressed the need for developing countries to integrate into the international trade system. Generally speaking, the system, per se, undeniably has got advantages and disadvantages. Nevertheless, any country, especially if small and developing, by staying aside the WTO will certainly renounce the possible advantages, but will not be able to avoid being affected by its shortcomings.

The lecturer followed referring to the policy conditions for accession, the main steps in the application process, the areas where commitments are to be offered and other formal requirements to be presented to the WTO Secretariat, including, for Syria, a detailed description of trade system and policies. In this respect, standard forms have to be elaborated and submitted to facilitate the presentation of the required information to the WTO members. Subsequently, bilateral negotiations are to be held between interested member countries and applicant countries (Syria). For the accession process the applicant can benefit from the technical assistance of the WTO secretariat or some other member countries.

As Mr El Hindi pointed out, a number of advantages can be enumerated in relation to the accession process, including: new trade opportunities through easier market access in goods and services; proper trade environment that facilitates predictability for export planning; commitments and rights restricted to member countries; transparency achieved through continuous trade policy reviews of member countries; dispute settlement system in solving controversies arising during implementation; special and differential treatment for developing countries, which comes from the recognition of the special needs of these countries for facing international trade.

On the other hand, on Mr El Hindi's view, accession to the WTO may have also some disadvantages, with special reference to: loss of government independence in designing its own intervention policies; significant costs of policy adjustments to ensure compatibility WTO; costs for developing countries of the implementation of the TRIPS agreement.

Nevertheless, he remarked that, in spite of the disadvantages, accession to WTO is worth the effort, especially considering the higher costs of non participation.

Mr El Hindi added that the experience of newly acceding countries reveals some central areas of negotiation such as the elimination of all non-tariff barriers, the limitations on export subsidies and stricter disciplines on State Trading Enterprises (STEs). Nevertheless, consumer subsidies do not, per se, contravene WTO rules. As regards to the SPS and TBT Agreements, Mr El Hindi indicated that recently acceding countries did not have many difficulties in complying with these agreements, although some obligations appear on matters such as standards, packaging, food control and hygiene, quarantine, etc. Regarding the TRIPS agreement, acceding countries have to pass regulations on Geographical Indications and plant variety, but such legislation does not usually contradict existing policies.

From the experience of the recently acceding countries, Mr El Hindi stressed that the accession negotiations require well prepared and qualified negotiators capable of balancing between the commitments offered and the advantages gained. Thus, the amount of work needed should not be underestimated, as well as the importance for securing funds required for staff training and for the participation in related international meetings. Nevertheless, accession to WTO can be

regarded as a means to benefit from the “opportunities” offered by market access for national exports.

Mr El Hindi indicated that desirable outcomes for agricultural negotiations:

- special and Differential Treatment for Syria as a developing country;
- better chances to obtain flexibility in a number of areas such as tariffication of non-tariff barriers, domestic support, export subsidies, protection for strategic crops’ producers;
- the possible application of Special Safeguards for sensitive products.

However, immediate actions have to be undertaken by Syrian authorities, such as the preparation of the information required on market access, export competition, domestic support, SPS, TBT and TRIPS. To carry out these tasks, negotiators should be named as soon as possible with the assistance of an agricultural unit, participated by representatives of all the concerned ministries and the private sector.

Mr El Hindi finalised his lecture by concluding that despite the large amount of work needed to prepare the negotiations, Syria’s accession to the WTO will help getting a number of advantages, including:

- better integration with the international economic system;
- benefits from the concessions given to developing countries;
- more market access opportunities for non oil exports;
- benefits from financial and technical support programmes of the WTO secretariat and from specific partners;
- benefits from the development dimension of the Doha declaration;
- reduction of input and other raw materials prices;
- on the longer term, acceleration of the economic reform in Syria, with enhanced competitiveness.

Mr Alvarez-Coque opened the discussion on Mr El Hindi’s presentation by underlining that the Syrian accession to the multilateral trading system is not only of the interest of Syria but also to achieve a better balance in the world trading system. Mr Alvarez-Coque pointed out that the system needs significant improvements, but the worst scenario would be the absence of the system. To understand if the system offers advantages to developing countries, the speaker referred to the accumulated experience of agricultural negotiations since 1986. While Uruguay Round negotiations on agriculture were heavily concentrated on the interests of US, EU, Canada and Japan (called the “quad”) a large number of developing countries have been working together during the present phase of agricultural negotiations, inserted into the Doha Development Round. The Cancun talks in September 2003 represented a good occasion to test the level of organisation of developing countries in the agricultural negotiations as illustrated by two examples. One is given by the emergence of a new force, the G20, a grouping of developing countries led by China, India and Brazil, among other WTO partners. In Cancun the Group of 20 succeeded in avoiding the negotiations to be monopolised by the Quad. Another example is given by the “cotton initiative”, launched by four African states to call for an end to unfair subsidies granted by developed countries to their cotton producers. Since the Cancun failure, the EU has taken some positive steps, including a reform of its cotton policy and, in May 2004, the U.S. Government lost the first round of a trade dispute on US cotton programs.

Sensitive issues in the agricultural negotiations appear to be the claim of developing countries for improving market access in the industrial economies and to give contents to the Special and

Differential Treatment. Though, developing countries have shown by their own acts that it is worth using the rules of the system to defend their interests and prospects for them to achieve positive outcomes are not pessimistic. As Mr Alvarez-Coque concluded, the WTO provisions still open a significant degree of freedom for the management of own policies, but adequate actions have to be taken in Syria to prepare for the negotiations, as well as for the “day after” accession when agreements will have to be implemented.

### **Discussion**

After the presentations, the Chairman invited the public to pose questions to the lecturers. Questions covered various areas concerning the preparation of Syria for trade liberalisation. Thus, some of the participants expressed their concerns about the possible impacts that accession to the WTO might have on producers, underlying that Syria would need to take actions for preparing its agricultural sector against the increased competition related to trade liberalisation. Participants made questions on the relations between the multilateral trading system and specific aspects, such as: (i) impact of liberalisation of trade of textiles on Syrian industry, in connection with the phasing out of the quota related to the Multi-Fibre Agreement; (ii) the need for subscribing international agreements on pest and plant control such as the International Plant Protection Convention (IPPC); (iii) the importance of taking appropriate actions to enhance export quality and marketing; and (iv) the compatibility of the WTO agreements with regional trade arrangements between partners that can be or not WTO members.

Mr El Hindi stressed the need for quick and technically qualified actions to prepare the Syrian agricultural sector for the WTO membership, highlighting that the process of negotiations will eventually lead to positive results for Syrian agriculture, but agricultural trade policies should adapt to the new scenarios as soon as possible. As regards trade liberalisation in textiles, Mr El Hindi pointed out that such multilateral process is taking place but this should not affect the Syrian decision of joining the WTO. As for the IPPC and its relation with the WTO agreements, Mr El Hindi stressed the fact that Syria has interests in taking part into this kind of agreements, independently from WTO membership, although the IPPC can be useful to assist the implementation of the WTO on Sanitary and Phytosanitary (SPS) measures.

Mr Alvarez-Coque referred to the consistency between regional integration and multilateral liberalisation, underlying that both processes are compatible, as actually recognised by the GATT agreement. This consistency is valid even when partners that are non-WTO members take part in the regional agreement. Finally, Mr Alvarez-Coque stressed that many options for trade policies remain even after the accession to the WTO, and that proper actions have to be taken to adapt small producers to the requirements and competition related to foreign markets, with or without accession to the WTO.



**Annex 1**  
**List of Participants**



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## **Annex 2**

# **Programme**



**3rd National Agricultural Policy Workshop**  
**Damascus July 1st 2004**  
**Cham Palace, Umayyad Hall**

- 09.00      **Opening session**  
H.E. The Representative of FAO in Syria  
H.E. The Ambassador of Italy in Syria  
H.E. The Minister of Agriculture and Agrarian Reform
- 09.30      Coffee Break
- 10.00      **Introduction to the Workshop**  
**Syrian Agriculture at the Crossroads: main features**  
Atieh El Hindi, Director, NAPC, MAAR
- 10:15      **Farming Systems in Syria**  
Ms Samira Al Zoughbi and Raed Hamzeh, NAPC Mr Atieh El Hindi & Mr Horst Wattenbach, FAO Consultant  
Chairman: Mr Jacques Vercueil, FAO Project SPA
- 11:00      Discussion
- 11:30      **Comparative Advantage of Selected Syrian Products**  
Haitham Al Ashkar, NAPC Researcher  
Frederic Lancon, CIRAD, FAO Consultant  
Chairman: Dr Nabi Rasheed Mohammed, Deputy Minister, MAAR
- 12:15      Discussion
- 12:45      Coffee Break
- 13:00      **Syrian Accession to WTO: Requirements and Opportunities**  
Atieh El Hindi, Director, NAPC, MAAR  
Discussant: Alvarez-Coque, FAO Consultant  
Chairman: Dr Ghassan Habash, Deputy Minister, Ministry of Economy and Trade
- 13:45      Discussion
- 14.30      **Conclusion**  
H.E. The Deputy Minister of Agriculture and Agrarian Reform



**Annex 3**  
**Papers Presented**



**3<sup>rd</sup> National Agricultural Policy Workshop**

**Farming Systems of the Syrian Arab  
Republic**

**In Support of Policy Analysis**

**June 2004**



## Executive Summary

The development and analysis of Farming Systems is an instrument adopted in support of agricultural policy analysis at the National Agricultural Policy Centre. The specific contribution of the national Farming Systems Study to the tasks undertaken by the NAPC lies in providing a framework of analysis based on a consideration of both the geographical differentiation as well as the socio-economic stratification of the agricultural sector of Syria.

The Farming Systems Study considers the potential impacts of changes in agricultural policy (e.g. prices, institutional support) at the household as well as aggregate level. Within the framework of the study, staff of the Centre implemented the overall concept in a selected number of systems. Given that this is the first broad implementation of a farming systems study in Syria, a remarkable degree of differentiation was achieved, as reported in more detail in the individual systems reports.

The specific objective of the study is to define relatively homogenous areas of agricultural production, based on appropriate agro-ecologic and socio-economic characteristics. These zones of major farming systems cannot be based on statistics based on administrative boundaries. Each farming system is characterized by its natural conditions, market integration and historic influences leading to differentiation and specialization of production within it. The contribution of each farming system to the national production of major crops and the degree of specialization is presented. Within each farming system, typical households represent the socio-economic variation, which exists naturally in any rural society. These household types are developed in light of typical resource endowment, their mix of livelihood assets and changes in the last decade. The share of each household type in the farming system in combination with their production orientation allows analysing ability to adjust to, opportunities deriving from, and vulnerabilities to changing production conditions.

The methodology of the study comprises of several analytical steps. In a first step, the team defined the major farming systems, which reflect geographic zones, marked by different agro-climatic, agro-ecologic and market conditions as well as production traditions based on socio-demographic characteristics and supporting public investments. Secondary literature was used to develop a preliminary structure and criteria for differentiation, which was subsequently refined in collaboration with experts of the different regions.

This resulted in the distinction of six major farming systems. Within the analysis of the structure of these systems, field-level information resulted in sub-divisions of the broad farming systems. A number of typical villages, representing the variation of the defined farming systems, was selected and the NAPC team spent on average three days in each one of the selected villages. The purpose of the village visits was to develop and adjust household typologies and to obtain information on major changes in the agricultural sector of the particular village.

The fieldwork included the household selection for individual farmer interviews as well as group discussion focussing on the compilation of information for each of the three household types, which represent socio-economic groups and their corresponding livelihood systems. Available statistics provided descriptions on the importance of each system in the national context in

terms of contribution to production of key commodities as well as the calculation of socio-economic characteristics of each system in terms of average holding sizes and cropping pattern.

Policy change and technological innovations will affect each household type differently, depending on the relative importance of the different income sources and livelihood strategies of the household. The characterization of each farming system in the national context allows reviewing the possible aggregated effect of policy change as well as the dependence of a farming system on major crops, which could be subject to policy adjustments.

For each household type, past developments in terms of resource endowment and composition of income sources shape the capacity to adjust to future challenges. Understanding the geographical expression of these patterns permits to address aggregate as well as social aspects for each household type, based on the presented framework for analysing the agricultural sector.

A summary description of the six farming systems with reference to their internal differentiation in subsystem and characterization of prevailing household typology is summarized in the following pages<sup>1</sup>.

### **Coastal Intensive Irrigated Farming System (FS1)**

The **Coastal Intensive Irrigated Farming System** covers 140000 ha along the Mediterranean coast. It is marked by very favourable agro-ecologic conditions and a very old cultivation tradition. The high rainfall levels and humidity throughout the year combined with mild winter climate creates a favourable environment for sub-tropical crops. Despite the small size of the system (0.8% of Syria), it contributes a very high share of its specialized products, especially citrus and greenhouse crops. Small average holding sizes (1.3 ha invested land) reflect the high population density and result in a disproportional share of holders (5.6%) compared the size of the broad farming system. The specialisation in crops under free market arrangements (greenhouses, citrus, field vegetables) are specific systems characteristics, as are the extremely good infrastructure for input supply and market access and the high importance of off-farm employment across the farm size classes. These off-farm opportunities are found in the public sector located in the two Muhafazat centres (Lattakia and Tartous), the important service sector of Lattakia as a national summer resort, as well as in the agricultural processing industries.

Within the system, a differentiation between the northern and the south part is observed, with a marked specialization in greenhouse cultivation in the Tartous part of the system, while the part belonging to Lattakia Governorate specializes more on citrus cultivation. This differentiation is the result of historic processes, whereby knowledge transfer from the Syrian workers employed in the Lebanese greenhouse sector coupled with a warmer climate caused the specialization on intensive greenhouse cultivation. In the northern part, the economic success of innovators provided a stimulus for the commercially minded farmers. The gradual adoption of the most successful crops led to the expansion of citrus at the expense of the previously dominating olive orchards. The characteristics of these two parts permit the definition of two small farming systems.

In the southern, **Greenhouse-based Farming System**, 5.2% of invested land is under greenhouses, taking the border of Baniyas Mantika as the border. Such a high share under greenhouses determines the agricultural economy of the farming system, through the production, employment generation as well as forward and backward linkages in the local economy. This greenhouse area corresponded in 2002 to 85% of the entire greenhouse area of the country (with most of the remainder being located in the Citrus-based coastal farming system).

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<sup>1</sup> The review highlights the main issues, while the Annex tables, maps and the main reports present further detail.

According to official statistics, almost 80% of the greenhouse areas of 3230 hectares were devoted to tomato cultivation, followed in order of importance by cucumber, green pepper and eggplant.

The highest share of cultivated land in the farming system is under rainfed olive, particularly in the wider southern part of the plain and towards the east, followed by 11.2% of invested land under citrus. Particularly the land under olive orchards leads average holding sizes in the system being 1.6 hectares, i.e. that average holdings in the Greenhouse-based farming systems are larger than in the northern system.

Field vegetables are likewise important, as they allow the application of skills developed under greenhouse conditions, but permit savings of input and capital costs. Their areas taken from statistics cannot be directly related to land areas because of double cropping and due to their partial cultivation as a second crop under new young tree orchards. The statistics indicate eggplant and squash as the most important field vegetables, each covering with slightly above 2500 hectares almost 6.5% of the invested land. The five most important field vegetables (eggplant, squash, cucumber, haricot and tomato) jointly occupy slightly above 22% of invested land. Recent trends include the expanding cultivation of strawberries, indicating the preparedness of the farming community to engage in new crops.

Livestock plays a relatively little role in the farming system due to the underdeveloped milk marketing system and little on-farm resources for forage production. Small numbers of dairy exist across the farm types, but are not distinguishing feature between the household types.

The average holding in the farming system as calculated from statistics has just below 1.6 hectares and cultivates 0.74 ha olives, 0.175 ha citrus, 0.35 ha field vegetables and own 0.08 hectares greenhouse areas (leaving 0.21 ha for other crops).

The northern, ***Citrus-based Farming System*** is dominated by 67% of cultivated land under irrigated citrus. It is therefore among the farming systems with the highest share of land under a single crop. Some diversification in citrus species and varieties occurs, but the basis features in terms of asset fixity on market trends of a single crop group and marketing structure remain. Rainfed olive cultivation is second in terms of area and covers 28% of cultivated land. This structure is the result of substitution of olives with citrus over the last decades. The most important other crop is irrigated tomato (3.3%), while intensive cultivation in greenhouses covers only 1% of cultivated land (equivalent to 15% of national area). The share of irrigated land in invested land is 35% in this farming system.

The almost 30000 holders jointly cultivate 32300 hectares, resulting in an average holding size of 1.2 hectare cultivable and 1.08 hectare of invested land per holder. Considering the average family size in the area, the available cultivated land per person stands presently at 0.08 hectare per person, which gives a clear indication of the limits to continued dependence on agricultural income for the population of the system.

The criteria for the establishment of household types were relatively homogenously applied in both farming systems. The three household types resulted in 75% belonging to the smallholder group, while 14% have holding sizes between 1.8 and 3.5 hectares and only 11% of holders operate larger farms. A slight, but unimportant north-south variation in this distribution exists.

Among the small farm type, livestock plays only a minor role for the livelihoods, while off-farm employment is very important as income source and future strategy. In the greenhouse-based system, the meaning of farm size is a relative one, as the economic performance depends much more on individual success in crop management and marketing than farm size itself. Most farm operations in the small farm group are carried out by family labour, with hired labour being limited to few operations with peak labour requirements, such as pruning and harvesting.

In both coastal farming systems, farming is marked by a relatively high specialization on few selected crops, with the risk spreading occurring via different citrus species and varieties.

Marketing of citrus is little differentiated. Climatic risks are relatively lower than in most other systems (but existent for citrus through frost and pests and for greenhouse in storms and pests). Major risk is however, the price risk associated with any intensive crop such as vegetables. Small households are at risk because of a lack of savings to compensate crop or price failures.

Poverty levels, in comparison with many other systems of Syria, are low because farm income risk is partly compensated by high levels of off-farm employment in the public sector.

Decreasing farm sizes put pressure on the system, exacerbated by the increasing expansion of areas under construction. The low average farm size is a risky factor for future incomes of the household, especially in the case that public sector and other off-farm employment opportunities fail to keep up with the population increase. In the former agrarian reform areas, land tenure will inevitably become an issue over the next decade. The absence of commercial credit limits the possibilities for the poorest in the system to invest flexibly in new opportunities.

Environmental risks, caused by the high use of fertilizer and other chemicals in the system, require further study and attention. Potential threats from chemicals exist for farmers that are directly exposed without adequate training and equipment as well as for the general public due to limited controls of residuals in the produce and to possible damage to groundwater cause by chemical infiltration into the aquifers. Within the greenhouse system, nitrate leaching is of particular concern.

Overall, the farming systems have shown great adaptability to market opportunities and farmers are prepared to capture new production and market opportunities, taking advantage of the very favourable environmental conditions. The introduction of new species and varieties to satisfy more differentiated demand could reduce price risks. The public sector could contribute significantly through the creation of an enabling trade environment, but also by strengthening quality control, including produce relevant for the export market. Adequate attention to land tenure issues and credit development can prepare the system for a positive performance over the next decade.

### **Hilly and Mountainous Farming Systems (FS 2)**

The **Hilly and Mountainous Farming Systems** cover the Syrian western mountains from Lattakia and Rural Damascus to the northern hills in Idleb and Aleppo governorates. They account for 6.5% of the area of Syria, 17% of its population and about 27% of the agricultural holders. High annual rainfall with relatively little variability, sloping terrain, and a high share of perennial crops and forest areas characterize the system. The basic farming systems characteristics of the broad farming systems are their smallholder structure based on tree crop cultivation and a high reliance on off-farm income and little livestock presence.

The high population density for a mountain system leads to holding sizes of just above 2 hectares, which is the lowest average after the coastal system. Combined with high population growth, this results in increased fragmentation of agricultural land. The agricultural income of the producers depends mainly on Olive, Apple Cherries and Tobacco. The specialisation of the farming system in these crops leads to high shares of national production stemming from this system (66% of olives, 70% of cherries, 63% of apple and 84% of tobacco).

Poor and medium households dominate the system (60% and 30%, respectively), with a high reliance on off-farm and non-agricultural income combined with relatively high education levels. Within the systems zones, the differences in production orientation related to the agro-ecological conditions has led to a sub-division of the broad farming system in two units.

Low hills and gentle slopes at altitudes of 300-500 meter above sea level characterize the **Hilly Farming System**. It is mostly located in Idleb Governorate and includes 470000 hectares of total land, of which 275000 hectares are cultivable. Most cultivable land is invested, with almost no fallow and only 15% under irrigation. The average holding size is approximately three

hectares with almost two-third of cultivated land under rainfed olive production. The only field crop with some importance is rainfed wheat (9%). This area provides the national market with 31% of its olives, 24% of its cherries and 64% of its Kakis.

Limiting production factors are the small agricultural holdings, the reliance on rainfall and restrictions of capital access, especially for the poor. The farming system is self-sufficient in labour and exports surplus labour to neighbouring systems, especially skilled agricultural labour for orchard operations. International labour migration is likewise important (Lebanon and Gulf States).

The household types for the farming system were developed, based on holding size, livestock ownership as well as assets and income indicators and resulted in an estimated distribution of households into poor (60%), medium (28%) and better-off (12%) holders. The groups differ in their livelihood sources, strategies and production orientation. It is estimated that poor farmers obtain an annual income in the order of magnitude of 75000 SP, compared to 300000 to 500000 SP for the better-off farmers.

Based on their income sources, poor farmers obtain 25% of their income from crop (and livestock) production, while 35% is derived from off-farm casual work and 30% from non-agricultural employment. For some farmers in this group, considerable income is earned through international migration, which is estimated to generate 10% of income in the household type. Better-off households, in contrast, obtain a higher share of their income from agriculture (40%), but off-farm employment is also important in this household type, with medium households falling in between (i.e. they differ mostly in scale of income and holdings, less in the composition of income sources).

Changes within the livelihood system in the last decade refer to decreasing livestock numbers and cherry areas as well as a decrease in the share of off-farm casual income and an increase in non-agricultural income. In addition, some expansion of olive areas within the system coincided with more rapid expansion at the national level.

For their future strategies to increase income and ensure food security, poor farmers focus on non-agricultural and off-farm strategies, while better-off farmers focus on the agricultural intensification and diversification in addition to increasing their agricultural land. Moreover, in the case of poor farmers, exit from the agriculture is considered, while better-off farmers still have the opportunity to combine non-agricultural and agricultural income.

The ***Mountainous Farming System*** stretches from border with Turkey to the coastal mountains to Rural Damascus and includes approximately 725000 hectares (of which 270000 hectares invested) and 175000 holders, resulting in an average holding size of only 1.5 hectares. The farming system is characterized by high rainfall dependence (78% rainfed cultivation) for the dominant perennials, mostly olive and apple trees. The only crop with strictly controlled agricultural plans is tobacco, which covers 3% of invested land, mostly in concentrated niches under the influence of the processing factory. The system includes Mantikas in Lattakia, Tartous, Aleppo Idleb, Hama, Homs and Rural Damascus governorates.

The extremely small average holding size of land on steep slopes with narrow areas and shallow agricultural soil characterizes this farming system particularly and explains the high importance of off-farm employment for the livelihoods (casual agricultural labour as well as international migration) of the majority of holders. Livestock cannot play an integrating role in the farming system, partly due to the absence of grazing areas.

The farming system provides the national market with more than 30% of the olive production, 59% of apple production, 82% of quince production and 42% of cherries. Within the system, farmers produce 67% of the Syrian tobacco. Other commodities like pomegranate, fig and almonds are produced in small quantities, in addition to crops for home consumption i.e. wheat, barley, lentil, onion, legumes and vegetables.