



**HAL**  
open science

## Impact of the food safety policies on the reduction of poverty in Tunisian rural areas

Raoudha Khaldi, Mohamed Zied Dhraief, Samia Haddad, Zouhair Rached, Martine Padilla, . European Association of Agricultural Economists

### ► To cite this version:

Raoudha Khaldi, Mohamed Zied Dhraief, Samia Haddad, Zouhair Rached, Martine Padilla, et al.. Impact of the food safety policies on the reduction of poverty in Tunisian rural areas. 106. EAAE Seminar : Pro-poor development in low income countries: Food, agriculture, trade, and environment, Oct 2007, Montpellier, France. 21 p. hal-02821488

**HAL Id: hal-02821488**

**<https://hal.inrae.fr/hal-02821488>**

Submitted on 6 Jun 2020

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# **Impact of the food safety policies on the reduction of poverty in Tunisian rural areas**

**KHALDI R.(1), DHRAIEF M.Z. (1), HADDAD S. (2), RACHED Z. (1) and  
PADILLA M. (3)**

Rue Hédi Karray, 2049, Ariana, Tunisie  
Tel: 21671230531 Fax: 21671230531  
Email : [khaldi.raoudha@iresa.agrinet.net](mailto:khaldi.raoudha@iresa.agrinet.net)

- (1) National Institute of Agronomic Research of Tunisia (INRA Tunisie)
- (2) Management and Economic Sciences Faculty of Nabeul – Tunisia (FSEG Nabeul, Tunisie)
- (3) CIHEAM – Mediterranean Agronomic Institute of Montpellier, France



*Paper prepared for presentation at the 106<sup>th</sup> seminar of the EAAE*

**Pro-poor development in low income countries:**

**Food, agriculture, trade, and environment**

**25-27 October 2007 – Montpellier, France**

*Copyright 2007 by KHALDI R., DHRAIEF M.Z., HADDAD S., RACHED Z. and PADILLA M. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.*

## **Abstract**

The observed trend of decreasing poverty in Tunisian rural areas, where agriculture is still dominated by family and where illiteracy rate and family size are high, questions may be raised about the economic policies adopted by the state. This article puts the analyses of these policies in the framework of food safety issue as food and poverty are tightly related and as food safety objective is multi-sectorial and multi-disciplinary. In economic development plans, food safety objective took the place of self-sufficiency. The analysis of food safety policy is based on a macro-economic analysis of the offer (policies of production pricing and subsidizing, investment policies) and demand (Policies of consumption subsidies and consumer prices) as well as the policies of fight against poverty. This analysis covers two periods: before and after the economic reforms of privatization and liberalization of 1987 (PAS: Structural Adjustment Plan).

The assessment of these policies shows that poverty fighting programs are numerous and rich in experiences. These policies are more and more based on assistance programs oriented toward productive actions. The liberalization and privatization efforts were reflected by better performance and competitiveness of the agricultural sector. This had a positive impact on the employment, the migration and the availability of food products in rural areas. The self targeting of the subsidies by differentiating the products reduced the budgetary cost of these transfers and enhanced the equity and the nutritional and food situation of the poor people. The higher increase in income of country people and the decrease of subsidies indicate the more and more use of income direct transfers.

**Keywords:** Poverty, rural area, structure adjustment, food safety, agricultural and food policies.

## Introduction

Since the independence in 1956, the Tunisian authorities have put the fight against poverty at the heart of their concerns. Efforts accomplished in that purpose were reflected by political decisions which had put the social element at the same level of priorities as the economic element. The economic goals are often tightly related to the social ones. Thus, nowadays we're experiencing a noticeable roll-back of poverty on the national level from 12.9% in 1980 to 4.2% in 2000 (INS<sup>1</sup>). Over the same period, poverty was reduced by 80% in rural areas and by 58.5% in urban areas reaching respectively 2.9% and 4.9% in 2000. The proportion of the poor residing in rural areas has dropped from 52.2% in 1980 to 25.8% in 2000 while it reached 74.2% in urban areas in 2000. This phenomenon was described as urbanization of poverty (UNDP, 2004) contrarily to other developing countries where poverty rates in rural areas are still high.

The Tunisian rural areas are still dominated by small family farms. 75% of the farms do not exceed 10ha and they only cover the quarter of the total agricultural surface (MARH<sup>2</sup>, 2006). 40% of the farmers earn a revenue of less than TD3.500/year<sup>3</sup> (Audinet Tunisie, 2007). Illiteracy rate and family size are quite high (Respectively 46% and 5%) (MARH, 2006; INS, 2006). Confronting this diagnosis, we can only question the overall economic policies implemented by the authorities to fight poverty in these areas.

The issue of poverty in Tunisian rural areas was subject to many economic and social studies, in particular those of the World Bank (1995, 2003), IFAD (2001) and UNDP (2004). The purpose of these studies was to help implement new strategies for development and fight against poverty. While researches remained limited to agricultural development and poverty wasn't explicitly analyzed (Abaab et al., 2000, Selmi et al. 2005, Elloumi et al., 2006), whenever it was, the authors tried to simulate the effects of liberalization on poverty (Chemingui et al., 2006) or to analyze the effects of the internal and external factors of the agricultural policy reform on the poverty in rural areas, especially policies of production pricing and subsidizing (Chemingui et al., 2001, Dhehibi et al, 2003) or more to identify the determinants of urban and rural poverty (Gharzouni et al., 2001). To calculate poverty indexes, other researches adopted a multidimensional (non monetary) approach related to indicators of wellbeing like ownership of durable goods and housing conditions (Bibi, 2004; Ayadi et al., 2006).

Although these researches are relevant and came up with interesting conclusions, they are still not sufficient because they adopted a sectorial approach related either to the agricultural policies of production pricing and subsidizing or to some indicators of families' social welfare without ever answering questions related food or food safety. It is a major component of poverty since enhancing food safety reduces poverty (Petit et al. 1995). Furthermore, it was always stressed out that starvation is a dimension of poverty. Moreover, certain researches that analyzed food safety retained agricultural policies as a security instrument (Khaldi, 1998; Chemingui, 2003). But poverty is a multidimensional phenomenon involving numerous social, economic, nutritional and alimentary components. Analyzing the overall state policies in this domain allows us to adopt a global approach. Thus, by putting this research in the framework of food safety issue, it fits into this global approach since this concept, as defined by many authors (Khaldi et al., 1995; Ghersi et al., 1996; Padilla 1997), is a multidisciplinary concept.

---

<sup>1</sup> National Institute of Statistics

<sup>2</sup> Ministry of Agriculture and Hydraulic Ressources

<sup>3</sup> 1 Tunisian Dinar = 1,76 Euros = 1,29 Dollars

This paper aims to analyze the impact of the food safety policies on the fight against rural poverty. It hinges upon three parts. The first part is devoted to the conceptual and methodological framework of the research and it involves the concept of food safety to answer the question of poverty. The second part relates to an analysis of the food safety policies implemented in Tunisia by demarcating two periods: before the structural adjustment and after it. The last part analyzes the impact of these policies on the fight against rural poverty.

## **I. Theoretical, conceptual and methodological framework**

During the last decades, a significant evolution is witnessed in the perception and the analysis of the problem related to both hunger and poverty.

### **1. Food safety and poverty**

The expression “food safety” appeared in 1974 during the first world food conference. It was meant to help act on and think about the national or local policies and the means to be implemented in order to feed the populations and ensure food sovereignty.

At the beginning, food safety was approached only in terms of availability or shortage. In line with this, the world food crisis at the beginning of the Seventies raised a fear by the governments and the development organizations of the assumption that an insufficient food offer could induce starvation and an increased poverty.

In this context, food safety consisted in guaranteeing enough of food offer to reach self-sufficiency through policies of support for the production and consumption. To reach this self-sufficiency, countries engaged in the “green revolution” by integrating technology as a factor of productivity growth. In spite of its success, this political option was criticized and wasn’t capable of ensuring food safety because of “its negative distribution impact, particularly on the income of the poor” (Petit et Gnaegy, 1995). The researches of Amartya Sen's (1981) on the importance of the food rights drove to consider the problems of food safety in terms of accessibility rather than availability, especially for the poor or low income populations. In other words, the food availability is a condition necessary but non sufficient to ensure food safety, contrarily to the beliefs of the Seventies and Eighties.

Consequently, food safety turned into a more complete paradigm, emphasizing on the overall capacity of a household to access food as the most important way to resolve the problem of the world hunger.

Since the mid-Nineties, the concept of food safety has gone beyond the reductionism of self-sufficiency by integrating new dimensions. Ghersi et Martin (1996) stressed out the role of the trade in ensuring food safety because of its being a mechanism regulating and offsetting variations of the national production on the food supplies. Petit (2002) confirmed liberal economists’ beliefs by considering that the best way to ensure food safety, does not consist in seeking national self-sufficiency, but rather in engaging in the international exchanges, in order to import what is not possible to produce at reasonable costs and to export the products with a relative advantage. However, Pinstrup-Andersen (2002) moderated the benefits of the globalization to achieve food safety by emphasizing on the risks of a non controlled liberalization destroying the wellbeing of certain vulnerable groups in particular the poorest and undernourished people. The concept of food safety was also extended to concerns in connection with the quality of the food and nutrition (Benson, 2004), the health (Petit, 1995), and the respect of the environment and the ecological laws on the sustainable and viable natural resources (Sasson, 1996).

Of these various concerns, we retain that food safety depends on three factors: the availability of food, the economic access to food and the suitable use of food. At the national and regional level, the availability of food must be ensured by the national production as well as the trade and the international and regional exchanges. At the level of the households, the access to food is key factor to food safety which depends on the purchasing power and/or the agricultural production. At the individual level, it is also important to consume a diversified and balanced food in accordance with the physiological needs.

Hence, for years various approaches of food safety were developed and were applied to particular contexts. From the “Macro” approach, the concept of food safety developed to the “micro” approach: from the country to the region, then to the household and finally to the individual. The analysis level was disaggregated because “food safety, on a given level does not guarantee in any way food safety on a more disaggregated level” (Gherssi et Martin, 1996). In this context, researches stressed out the “micro” approach, but it is important to note that some restrictions on the definition of the target population, on measurements and on management exist. These restrictions lead to problems of inefficiency of the systems in place that can hamper the fight against poverty (Khaldi et al, 1995). A complementary “macro” approach would allow an active development of the agricultural and rural economies in order to stimulate a fast growth, weaken poverty and stabilize the population. Ghersi et Martin (1996) propose, in addition, a renewed and integrated food safety approach that switches from a “pyramidal approach” i.e. working top to the bottom to “a network approach” with a better coordination between the various partners. The outcome of these various approaches is that the interconnection between the different levels of analysis of food safety is an essential condition for tackling the problem of rural poverty.

Within this framework, the approach adopted two levels of the analysis of food safety: macro- and micro-economic. At the macro-economic level, the analysis covers the policies of food supply, demand and fight against poverty (Fig.1, Appendices). These three components constitute the pillars of the food safety policy and have an explicit or implicit impact on the reduction of poverty. Thus, for the analysis of the offer, we will examine the public policies to increase the food availability, to steady food supplies and to regulate the market. It will be a question of analyzing the policies of production pricing and subsidizing and the policies of investment and credit. In respect with the policies of demand, the analysis will encompass the policies of incomes and the policies of consumption pricing and subsidizing.

The assessment of these policies at the macro-economic level will be based on the analysis of the agricultural sector success in improving the food availability, the competitiveness and coverage rate, as well as its success in preserving jobs and reducing the rural migration. At the micro-economic level, we will examine on the one hand the evolution of the incomes, the expenditures and the food and nutritional situation of the households and on the other hand the fairness of the policies of subsidies.

## **2. Measurement of poverty**

Since 1980, the INS defined the poverty threshold based on basic nutritional and caloric needs. The unit value of these needs rests on the consumption composition of the first quartile of the total population – selected as reference group for the poor. The nutritional value at the poverty threshold is equal to the product of this unit value by the quantity of calories of the poverty threshold. The total poverty threshold is estimated by dividing the food poverty threshold by the share of food in the total expenditure of the households of reference. This approach is applied separately for the urban and the rural areas.

The approach, used by the World Bank since 1995 in the reports on poverty, differs from that of the INS when it comes to estimate the food poverty threshold and the nonfood expenditure for the rural and urban areas (Ayadi et al., 2005). This leads to different conclusions, that is to say a higher rate of poverty in rural area.

We adopt for this analysis the approach of the INS (also adopted by the UNDP) in order to preserve the homogeneity of the sources and the data and to place ourselves on the level of the national issue of poverty as defined in the economic and social development plans.

## **II. The food safety policy in Tunisia**

In Tunisia, food safety was made a public issue in 1992. It was defined in the Food World Summit (1996) as an alternative allowing “the country to ensure a quality food in sufficient quantity and without interruption by the optimal combination between the national production, the import and export” (Republic of Tunisia, Position of Tunisia at the Food World Summit, 1996). We point out from this definition that food safety remains, as the policy of self-sufficiency adopted from 1977 through 1986, dependent on the concern of the trade balance stability, but also it constitutes a goal more inserted into the global economy. Food safety is an objective concerning the whole population, in particular the most underprivileged population, and refers to concepts of food quantity, of continuity and regularity of the supplies but also of quality of the consumed products.

### **1. Policies of offer**

The policies of offer concern primarily the agricultural policy which includes a range of measures related to the increase in the food availability, the stability of the supplies and the regulation of the markets.

#### **1.1. Main directions of the agricultural policies**

Generating approximately 12% of the GDP (average of 2001-2004) and 13.5% of the total revenues of export and employing nearly 16.3% of the working population (INS, 2004), agriculture occupies an important economic position. However, vis-à-vis this effort of contribution to the total economic growth, the sector is confronted with other requirements of social nature. The rural population accounts for 35% of the total population. It earns the main of its income from the activities directly or indirectly related to agriculture. This sector includes 516000 farms counting 54% not exceeding the 5ha (representing 11% of the total agricultural surfaces) and 75% not exceeding the 10ha (representing the quarter of the surfaces). Those own only the quarter of total farming surface and are facing the parceling out. On the basis of income 40% of the farms belong to small family of farmers whose annual income does not exceed the TD3.500 per year (Audinet Tunisie, 2007). Small farms contribute with 21% in the production of cereals, 30% of legumes, 23% of fodder, 55% of vegetables and 32% of arboriculture. They hold 76% of the bovine cattle and 44% of the sheep. Generally, more than one family live these are farms (50% of the farms). 74% of the owners are illiterate and 71% of the owners are 60 year old or more (MARH, 2006). It is then logical to believe that this environment is further hit by poverty.

In term of political economic and agricultural options, Tunisia knew two rather distinct periods. The first one (1960-1985), corresponded to a development phase during which the agricultural sector was assigned to provide a “surplus” of resources to the remainder of the economy. This net transfer from agriculture was essential to fund the development process based on the industrialization and the production of goods to replace the imports. The extraction of the potential farming surplus was done especially by subsidizing the prices to

modify the trade terms to the benefit of the nonagricultural sectors (Boughanmi, 1995). In consequence, the increasing subsidies of the agricultural sector reached 4% of the GDP in 1984; the deficit of the food trade balance was about 150 million Dinars – a figure never reached before; and the food coverage rate of about 50%. The economy as a whole 1984 entered a crisis marked by a stagnating GDP and increased debt and unemployment.

The second period, after 1986, was characterized by more liberal policies beginning with the implementation of the Structural Adjustment Program (PAS) in 1987. The Agricultural Structural Adjustment Program (PASA) redefines the role of agriculture in “the contribution to achieve the external equilibrium, the state budget, employment and regional balance”. Within the framework of this program the planned economic and institutional reforms aimed to improve the environment general in the sector by supporting and reinforcing the role of the private operators through the privatization of the public land and the services to the farmers. They aimed to give back to the market its role in fixing the prices by progressively reducing the subsidies. This commitment to liberalization is then confirmed in 1994 when Tunisia joined the WTO and by the signature in 1995 of a partnership agreement with the European Union leading gradually to a free trade area by 2010.

## **1.2 Policies of increase in the food availability**

Since independence, the authorities have set the increase in the production and productivity among the top priorities of the agricultural sector. Thus, the chosen options were based on the intensification, designed as the principal instrument of the increase in the agricultural production. According to this vision implying the modernization of the sector, technical, economic and social options were retained (Khaldi, 2003). The economic policy considered, is primarily based on policies of production pricing and subsidizing and on policies of investment and access to loans.

### ***1.2.1 Policies of production pricing and subsidizing***

The policies of production pricing and subsidizing aims to guarantee certain price levels that allow an acceptable profitability to the producers, stimulate competitiveness, compress the production costs and ensure the optimal allocation of the resources everywhere while taking into account the purchasing power of the consumer.

Within this framework, the intervention of the State was permanent but diversified according to the periods. Protectionism was reinforced during the pre- structural adjustment period when agriculture was fragile still. In order to encourage the farmers, increase their production and maintain their income, the State fixed the producer prices to levels higher than the average in the world and subsidized the inputs. This policy had for prime objective “to minimize the price fluctuation consequences in world, but was then more and more used to limit the production cost risks of increase on the urban consumers” (Khaldi et Al, 1995). It mainly intended to fix the prices of the basic products (cereals, milk and oil, sugar) at enticing levels. The products under the law of offer (vegetables, meats, eggs) are the subject of indirect interventions on the offer (imports of supplements, increase in the storage capacity, price regulation fund).

During the Sixties, foodstuff inflation was very weak at about 3.5% on average and even 2% for cereals. In the Seventies, the producer prices increased sharply (7%). In fact, it was a diminution of the real prices if we take into account the distortion between the producer prices and the production charges. Until 1986, the prices continued speeding up with a pace of 10% on average for cereals. From the PASA, the tendency to the liberalization of the prices is accentuated (Table 1, Appendices). The price system tried to correct the resource

allocation distortions gradually by reducing the credit costs, taxes on farming and the subsidies on the input prices and on the water price.

Since 1992, the subsidies on the fertilizers were removed. Currently, 70% of the production value is made on the free market except for wheat whose prices are guaranteed. The intervention prices are established for the barley and the olive oil.

### ***1.2.2 Policies of investment and credit***

During the 30 last years, the agricultural and rural development priority remained the mobilization and exploitation of the water resources. The water resource control mobilized on average more than the third of the total agricultural investments during that period (Tab.2, Appendices).

Since the beginning, the investments in water resource control were in line with a long-term strategy of the agricultural infrastructure development accompanied by investments in equipment. In addition to the hydraulic field, the national priorities were also centered on the breeding (13% and 12.6% of the total of the investments during the same period) and on water and soil protection (whose share has gone from 8% in the 70's up to 12.3% over the period 2000-06), two major instruments in the policy of safeguarding the rural area (Tab.2, Appendices). Simultaneously, Tunisia continued its effort to increase in the food production and diversification betting on the development of arboriculture (oleiculture and citrus fruit in particular) and fishing considering their importance in exports.

The progressive liberalization of agriculture allowed private sector to occupy the first rank in terms of investment (52% during the period 2001-2006 against 38% during 1984-1990).

One of the essential components of fight against poverty is also to allow for the farmers an access to loans less constraining and better adapted to their needs. Thus, the authorities appropriated 20% of the agricultural investment funding in the form of bank credit; the remainder is divided between self-financing (61%) and subsidies (19%). In 1997, the Tunisian Bank of Solidarity (BTS) has been created with a portfolio of loans to individual small farmers and to institutions of microfinance. Approximately 40% of the BTS micro-loans are granted to farmers.

With the progressive reduction of rural poverty, the ratio of the bank loans for agriculture and fishing compared to the added value of the sector decreased from 3.8% in 2000-2001 to 2.1% in 2003-2004 (WB, 2006). For the loans of harvest campaign, the regression is even more remarkable (passing for the same period from 2.2% to 0.9%; BM, 2006). The proportion of the farms of less 5ha having asked for a loan of harvest campaign dropped from 4.6% during 1994-1995 to 3.7% during 2004-2005. These small farmers, fearing the debt risk, prefer to fund their agricultural activities through other means (revenues from other activities, family, friend, et cetera). Around 40% of the farmers now maintain other activities against 35% in 1994 (MARH, 2006).

## **2.2 Measures of supply stability and market regulation**

The first period of the pre- structural adjustment was marked by strict control, the monopoly of the State and the control by the authorities over the collection, the import, the export and the distribution of the goods. The second period of the post- structural adjustment supported the private initiative.

The principal market regulating instruments implemented are fixing the producer prices, subsidizing the consumer prices of the basic products (cereals, milk, seed oil, sugar), taxing as well as regulating the imports. The choice of a price stabilization mechanism is inevitable in order to protect the farmers from a fall of the prices and the consumers and industries from

a sharp rise. In the same time, the reinforcement of the specialized professional institutions played an important role in regulating the markets and marketing especially for the strategic products (cereals, milk, seed oils and potatoes).

### a) Cereals

In its cereal market regulating strategy, the government established a public institution, the Office of Cereals (OC), intervening in the same time on the producer price control, resale and consumption and in the regulations of the transport of cereals. It holds also the quasi-monopoly of the collection and the importation of cereals.

The comparison of the local prices and the world prices showed that, during the period structural adjustment, the cereal sector profited from a reinforcement of nominal protection of the cereal cultures (Bread wheat, durum wheat, barley). For these productions, the tax and tariff reforms went in the direction of a decreasing protection during 2000-2004 (Tab.1).

**Tab.1. Evolution of price's distortions in Tunisia compared to the world market \***

	1985-1988	1992-1995	2000-2004
Durum wheat	1.32	1.44	1.23
Bread Wheat	1.64	1.79	1.44
Barley	1.54	1.49	1.11

\* Averages of the ratios price to the production/price to the importation expressed in national currency.  
Source: Our calculations from INS data

Since the mid-nineties, the progressive liberalization of the cereal collection and storage clearly contributed to the reduction of the weight of the Office of Cereals intervention and encouraged the private sector to enter the cereal market. In fact, the development of the storage capacities shows that the share of the private sector in the collection and storage reached 30% in 2005 (CNEA, 2005a).

### b) Milk

Before the structural adjustment, the authorities supported the imports of dried milk, less expensive, to the detriment of the development of a milk industry based on the local production of fresh milk. The monopoly of the State on the dried milk imports, the policies subsidizing the drink milk and the monopoly of the collection by the Office of the Breeding and the Pastures (OEP) mainly blocked the creation of a viable and effective system of milk collection and the development of a local industry of dairy production. The industry became more active after the reforms of PASA with the evolutions of the dairy policy in favor of a liberalization of the dried milk imports and a progressive privatization of the collection. This dynamics allowed the development of a dense collection network ensuring a continuous provisioning of the factories, the increase in the transformed quantities of local milk, the reduction in the dried milk imports and the increase in the consumption of the drink milk.

In 1995, in order to further promote the production of the drink milk, the government created a lump subsidy to the factories that would decrease gradually. This subsidy allowed to maintain the drink milk consumer prices and to reach self-sufficiency of milk in 2000.

### c) Seed oils

Tunisia made the economic choice of exporting the olive oil (40% to 50% of the national production) and importing the seed oil. The National Office of Oil (ONH), created in 1962, detains the monopoly of edible oils (colza) and exports of the olive oil. It ensures the distribution of seed oils and fixes their selling prices.

The subsidy is determined according to the cost and resale price set in a way that maintains the consumer price. Since 2003, the State liberalized the imports of the seed oil to the benefit of the private refiners and bottlers who took advantage of tariffs reduction. This liberalization supported the creation of new refineries and bottling factories, made possible thanks to the

dynamics in the olive oil sector whose exports were also liberalized. Important efforts one carried out on the level of the packaging, the diversification of the imported products (maize, sunflower) and the marketing creating a strong competition on the national market.

#### **d) Potatos**

Being regarded as a strategic product because of its huge consumption, the potato is the subject of a specific measure to regulate its market considering the risks related to the fluctuated production. The strategic stock managed was created since 1982 by the Inter-Professional Group of Vegetables (GIL) for the stabilization of the market. However, because of the GIL's limited storage capacity, his inflexibility on the prices and his difficulty of adapting to the free market conditions, a partial privatization of the storage started in 1995. The volume stored by the private operators has gone up on average to 81% of the total storage volume during 1998-2004. This regulating policy allowed increasing stocks, instigating the potato market and reducing the imports.

### **2. Policy of demand**

The demand policies main goal is to preserve the consumer purchasing power and their food situation. They were always related to the offer policies, in particular policies of pricing and subsidizing.

#### **2.1 Policy of consumer price and subsidy**

To ensure its objectives of social welfare, Tunisia chose the subsidy instead of the direct transfers of incomes. The authorities regularly tried to reduce the cost of living for the population by subsidizing the prices of the foodstuffs. At the beginning, it was a direct subsidy, not targeted on the products of first need (cereals, milk, oil, sugar, imported beef and veal, maize, soy bean, tea, coffee).

A special fund of transfer, the General Fund of Compensation (CGC), was created in 1971 to manage the system of subsidies to the consumer prices of the products of first need, the producer prices and the prices of the inputs. Since 1984, a drop of the revenues of the CGC was noticed because of the decline of the oil production and price. The amount of the subsidies increased as did inflation and the population. In addition to the effect of its intrinsic inefficiency and substantial flight going to the non poor (Alderman, 2002), the deficit of the CGC reached in 1984 its maximum with a coverage rate of 56% against 86% in 1983. The subsidies amount also reached its maximum estimated at 8% of the total state expenditure and 3% of the GDP. The subsidies amount remained high until the end of the Eighties and truly started to drop only since 1990 (Tab.2).

**Tab.2. Subsidies to the consumption of the basic foodstuffs**

	1981-1983	1984-1986	1987-1989	1990-1993	1994-1995
% Total expenditure	5,8	7,6	6,6	6,0	5,1
% GDP	2,2	2,9	2,4	2,0	1,7

Source: Araujo BonJean et Chambas, 1999

Strongly marked after the violent reactions to reductions in the program, the government adopted since 1990 an inventive approach to reduce the budgetary cost of these transfers while safeguarding the consumer purchasing power and by improving the food situation of the poor.

These reforms tried to target the subsidies of the foodstuffs by a differentiating the products through (Tuck et al, 1996; cited by Alderman, 2002):

- Subsidies to items perceived as “of a lower quality”, but with equal nutritional value, because their packaging or ingredients were not attractive. These products are automatically bought by lowest income population.

- The liberalization of the trade of non subsidized varieties of a better quality which attract the comfortable households.

This reform involves several products. The seed oil sold by the ONH (colza) is subsidized, whereas that of the private distributors, of a better quality (maize, sunflower) is sold in an attractive packaging and is not subsidized. It is the same thing for the milk whose subsidy, of a value of TD0.030/liter, is limited to fresh half skimmed milk. The other milk varieties, usually bought by a wealthier population, do not profit from subsidies. For the bread two categories are sold: the large bread (gone down from 700g to 500g) is compensated more than the baguette (gone down from 300g to 250g) (Khaldi, 2007).

The evolution of the consumer price index shows that the price increase would have been higher without the subsidizing policy adopted for the basic commodities. Between 1983 and 2002, the consumer price index was multiplied only by 2.7 (Tab.3).

**Tab.3. Evolution of the consumer price index (1983- 2002)**

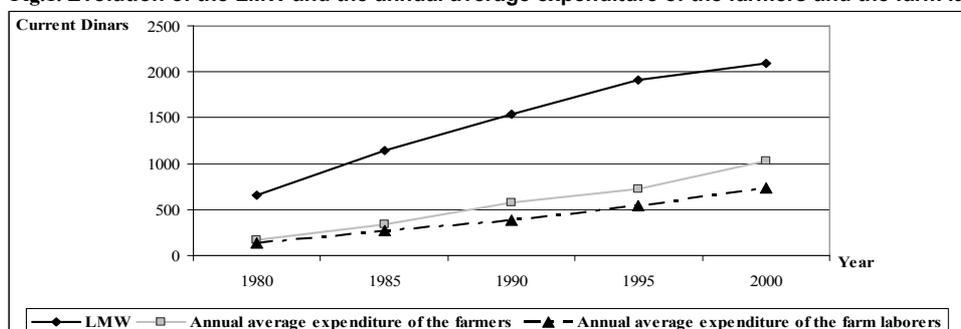
	1983	1985	1990	1995	2000	2002
Index	100	116,7	165,1	217,2	254,6	266,7

Source: Our calculations from INS data

## 2.2 Increase in incomes

The evolution analysis of Legal Minimum Wage (LMW) allows apprehending better the progress of the standards of living of the most underprivileged categories. In line with this, the growth of the LMW during the period 1980-2000 was faster than the annual average expenditure for the socio-economic group of the farmers and the farm laborers (Fig.1). This allowed increasing purchasing power of the farmers and the farm laborers and consequently improving their living standards.

**Fig.1. Evolution of the LMW and the annual average expenditure of the farmers and the farm laborers**



Source: INS data

## 3. Programs of fight against poverty

The programs of fight against poverty played an important part in the eradication of poverty. As poverty moved back, the programs introduced a new productive approach based on the solidarity compared to the initial approach based on the assistance (Khaldi et al., 1995). The rural development programs and the National Funds of Solidarity programs are the most important programs for the elimination of the “pockets of poverty”, the reduction of regional imbalance and the rural migration.

### 3.1 Programs of rural development

During the Sixties, the agricultural policy supported the areas with a high agricultural potential where a modern agriculture developed. This caused regional disparities and an opposition between farming companies turned towards the market and a small family farming producing for subsistence and exerting an increasingly strong erosion of the area”. The

solution started with the “projects of fight against poverty”, a form of distribution of wages through the participation in development public works. Considering the importance of the budget allocated with this action, a new form of assistance was set up, the Program of Rural Development (PRD) whose objective was “the creation and the consolidation of new jobs and the improvement of the income of the underprivileged population”. Being judged a much dispersed action, a Program of Integrated Rural Development (PIRD) was created. It is based on an integrated approach of productive and nonproductive actions (promoting agriculture, preserving the natural resources and improving the living conditions) and falls under a growth perspective (Khaldi et al., 1995).

The table 4 shows the dominating place occupied by the basic agriculture and infrastructure in the funds allocated by the PIRD.

**Tab.4. Distribution of the funds allocated by the PIRD by activity**

Activities	Amount (1000 DT)	%
Agriculture	167 701	58,5
Fishing	4 650	1,6
Small activities	5 301	1,9
Infrastructure	95 5861	33,6
Execution of the program	333	1,9
Other unforeseen	6 558	2,3
TOTAL	285 404	100,0

Source : FAO (1995)

### **3.2 The Solidarity National Fund program (FNS)**

The Solidarity National Fund 26-26<sup>4</sup>, created in 1992, started as an action built around the concept of solidarity. This fund allowed, within a very short time, improving the living conditions in the marginal areas (called “zones of shade”) and reinforcing the mutual aid and support between the various social categories.

The actions of this fund were extended by an employment fund (21-21), created in 2000, and especially by the creation in 1998, of the Tunisian Solidarity Bank (BTS) which awards loans with preferential conditions to craftsmen and entrepreneurs for the launching of their projects, called “micro-project”.

During 1993-2003, the principal achievements of this fund mainly involved the wellbeing of the populations (Tab.3, Appendices). According to the annual report on the infrastructure indicators (INS, 2005), the number of people accessing water in the rural areas reached nearly 3.1 million in 2004 against 2.1 million in 1994, allowing, over the same period, the rate of users in rural areas to move from 60.6% to 87.5%. As for electricity, an evolution of the connection rate within the rural households is noticeable, increasing from 66.3% in 1994 to 97.3% in 2004.

Other specific actions fit within the framework of the vulnerable population social integration programs like, in particular, the access to the care (free and reduced fee according to the family circumstances) and the various specific assistances.

### **III. Impacts of the food safety policies on the reduction of rural poverty**

The impacts of the policies of food safety on the rural population can be approached on two levels: at the macro economic level by the assessment of the results of the agricultural sector and at the micro economic level by analyzing on the one hand the food expenditure of the

<sup>4</sup> The funding sources of the FSN are various: donations, contributions of individuals or companies, tax resources, State budget appropriations.

rural households and their food and nutritional situations and on the other hand the equity of the subsidizing policies.

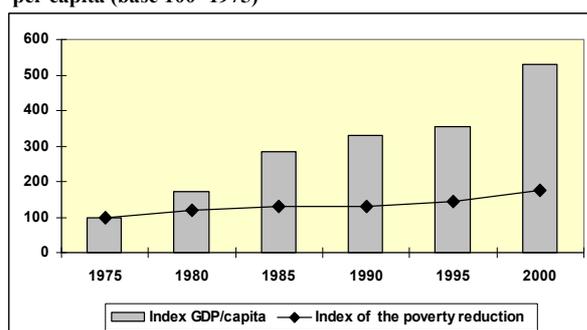
## 1. Impacts on the results of the agricultural sector

### 1.1 Improvement of the sector's safety and competitiveness

The pursuit of a poverty reduction strategy must initially answer an economic growth requirement. In Tunisia, the comparison analysis of the evolution of the economic growth and evolution of poverty during 1975-2000 shows that the progress made in poverty reduction exceeded the economic results measured by the GDP per capita. In indicial terms, during 1980-2000, poverty dropped by 5.3% whereas the improvement of the index of GDP per capita was 77% over the same period (Fig.2). This shows the impact of the growth multiplier effect on the poverty reduction.

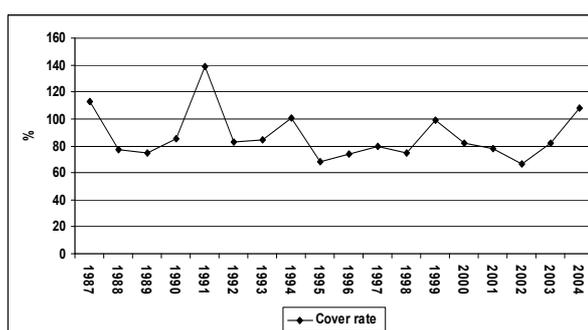
Reducing poverty in rural areas comes down to stimulating the growth of the agricultural sector resulting in a better competitiveness of its products and a coverage rate of the imports by exports higher than 100%. During 1987-2004, the evolution of the trade balance of the agricultural and food products shows that it is very dependent on the climatic conditions and the production levels. Consequently, the cover rate oscillated between a maximum of 139.9% in 1991 and a minimum of 66.6% in 2002. In 2004, this rate reached 107% (Fig. 3).

Fig.2. Indicial evolution of the poverty reduction and the GDP per capita (base 100=1975)



Source: UNDP, 2004

Fig.3. Evolution of the cover rate of the agricultural sector



Source: Our calculations using data from INS

After the structural adjustment, sizeable levels of food safety could be reached. The average of the rates of self-sufficiency for the principal agricultural products has gone up for corn from 57% during 1981-1985 to 59% during 2001-2005, for the barley from 89% to 91%, for the beef and veal from 69% to 98% and for the dairy products from 57% to 88% (Tab. 4, Appendices). The low rates recorded for oils are explained by the political choices of exporting the olive oil and the importing the seed oils whose consumption strongly depends on the olive oil prices on the domestic market.

These performances are due to the production increase which was multiplied by 3.3 for the dairy products; 3.3 for the beef and veal meat; 3.7 for the sheep meat; 2.4 for potato; 6.27 for vegetables; 5.5 for the fruits; 1.6 for cereals; 1.2 for the olive oil and 1.5 for the seafood (Tab.5, Appendices). However, in spite of a remarkable growth for the meats and the dairy under-sectors, they remain noncompetitive to date. It costs 1.8 to 2.6 times as much to produce beef and veal meat in Tunisia that it does to import it and 1.2 to 2.1 times as much to produce milk (WB, 2006). The choice of the authorities to produce noncompetitive products is an answer to the needs for self-sufficiency, employment and reduction of rural poverty.

## 1.2 Keeping the farming population in place and reduction of the rural migration

Although farming employment is declining (28% of the total working population in 1984 against 16% in 2004), the farming population is maintained since 1991 around 25% compared to the total population. This is explained mainly by a reduction of the rural migration. Since 1987, considering the accelerated urbanization (about 61% currently), a migration in great communal majority (urban or inter governorships) starts to appear. This migration form reached 90% of the whole of the migrations in country (INS). The imperative reason of this migration remains job seeking.

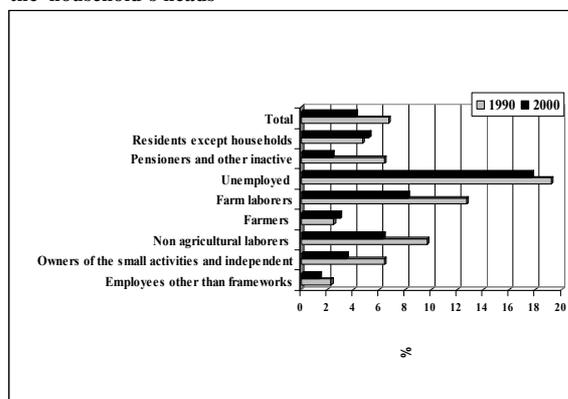
## 2. Impacts on the expenditure and food availability of the households

### 2.1 Impacts on the household expenditures

The analysis of the distribution and the evolution of the household expenses shed some light on the standard of living of the rural population and the roll back of poverty. During 1990-2000, all the socio-economic groups registered a significant reduction of the poverty rate including the farmers and the farm laborers in particular. The poverty rate for this last group is estimated at 8.2% in 2000 while it exceeded 12% ten years ago (Fig.4).

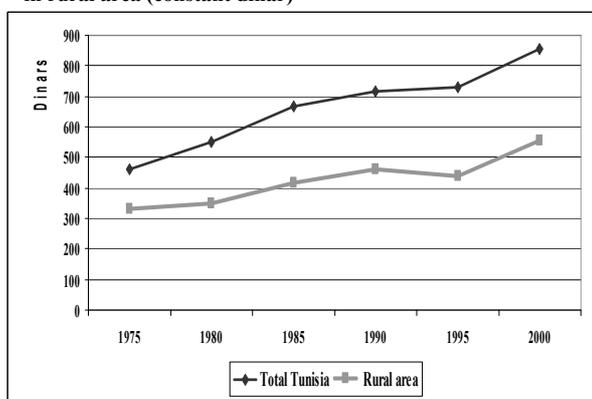
In the same time poverty in rural area is rolling back. We notice an improvement of the rural population incomes reflected by progress of the average expenditure by capita and per annum (Fig.5). This progress is comparable with the national average, with stronger increase for the rural area and is natural in view of the economic performances achieved by Tunisia during the last years. Indeed, the GDP per capita increased at annual compound rate of 4.2% during 1987-1991 and then at 4.5% during 1992-1996 to reach 5.2% during 1997-2001.

Fig.4. Rate of poverty per socio-professional category of the household's heads



Source: INS data

Fig.5. Evolution of the average expenditure per capita / year in rural area (constant dinar)

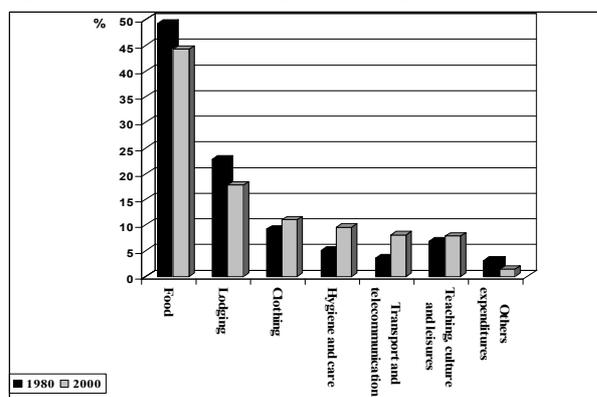


Source: INS data

The roll back of poverty and the rural families' life improvement are also observed in the evolution of the consumption function. A high proportion of the basic expenditure (in particular food) indicates "the threshold characterizing the model of consumption of the poor population" (UNDP, 2004). In Tunisia, the share of the food expenditure in rural area dropped of almost 5%, moving from 49% in 1980 to 44% in 2000 (the national average was around 38% in 2000). That demonstrates an improvement of the living standards of the rural population which devotes an increasingly significant part of its income to the expenditure other than the basic ones, especially to lodging and clothing (Fig.6).

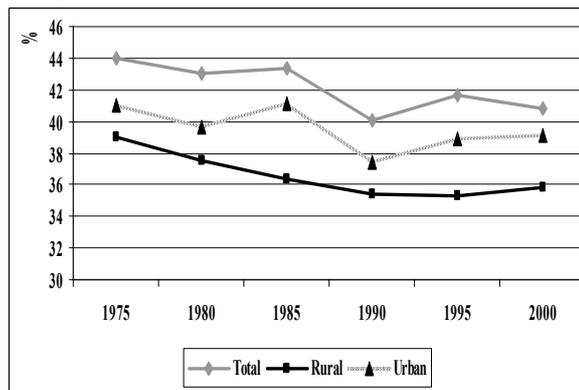
The expenditure distribution is overall less and less uneven, especially in rural areas. The Gini index, which reveals the disparities between the social groups, experienced a downward trend from 43% in 1980 to less than 41% in 2000 (Fig. 7). However, tackled by area, the distribution analysis shows an amplification of the inequalities during the last decade, particularly in urban area (37.4% in 1990 against 39.1% in 2000), while in the rural area, the index of Gini decreased slightly (35.8% in 2000 and 35.4% in 1990).

Fig.6. Structure of the total expenditure /capita /year in rural area



Source: INS data

Fig.7. Evolution of the Gini index (1975-2000)



Source : INS data

## 2.2 Impacts on the food and nutritional situation

The reduction of the food expenditure share was accompanied by deep changes in food consumption in quantitative and qualitative terms: Rural dwellers consumes more and better.

The evolution of the quantities consumed between 1980 and 2000 shows that the Rural dwellers consumed, in 2000, approximately 1.3 times more fruit and vegetables, to 1.6 times more fish and more than 1.5 times more meats and poulties and 2,4 times more eggs (Tab.5). Whereas a light reduction of approximately 5% in the milk consumption and dairy products is registered because the consumption of fresh milk diminished (36Kg/person/year in 1980 against 22Kg/person/year in 2000) in favor of the dairy products (the yoghurt consumption almost doubled). A reduction in consumption of cereals of about 5% is also observed. This is especially due to the cereal subsistence farming decrease (4.9% of the overall consumption in 2000 against 18% in 1980) and to the fall of the durum wheat consumption since 1985 and its progressive substitution by bread wheat, in particular in the form of bakery bread whose consumption was multiplied by 1,6 between 1980 and 2000 (respectively 16Kg/person/year and 26.4Kg/person/year).

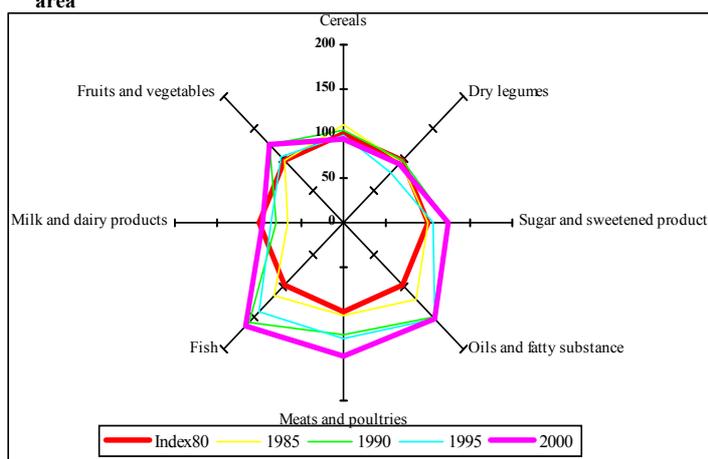
In general, we note a greater diversification of the diet in rural area with especially a higher consumption of animal proteins and fruits and vegetables, but richer in sugar and sweetened products, oils and fatty substance. The nutritional profile calculated in caloric terms illustrates this evolution very well (Fig.8). The energy value of the food ration in this area gradually decreased from 2452 kcal/head/day in 1980 to 2294 kcal/head/day (INS). It remains very close to the recommendation of the WHO of 2274 kcal though. “The self targeting of policy protected the daily amount of calories of the poor, more than had done it the subsidy reductions”. (Tuck et al, 1996)

**Tab.5. Evolution of consumption in rural area (kg/capita/year)**

Products	1980	1990	2000
Cereals	224,6	235,8	212,4
Dry Legumes	2,9	2,9	2,7
Vegetables	63,2	75,4	73,3
Oils and fatty substance	15,6	23,5	23,6
Meats and poultries	10,5	13,3	15,7
Fish	1,9	3,0	3,1
Milk and dairy products	46,4	37,2	31,6
Eggs (piece)	38	59	89
Fruits	35,7	47,1	50,3
Sugar and Sweetened products	14,7	16,9	17,0

Source : INS data

**Fig.8. Evolution of the nutritional profiles of food consumption in rural area**



Source : Khaldi, 2007.

### 2.3 Impact in terms of equity

Before the Structural Adjustment, the full-scale subsidizing system resulted in perverse effects insofar as the rich people benefited from it more than the poor. Indeed, the analysis of the subsidies by area for the basic commodities shows that, for cereals, the urban areas received in 1980 1.1 times more subsidies than the rural areas (Tab.6). This reflects the inefficiency of the universal subsidy approach and the non differentiation of the products according to quality and price (Khaldi et Al, 1995). This ratio, though still high, tends to decline. It reached 1.02 in 2000. The share of the cereal subsidies in the income is still higher in rural areas and decreased by about 60% in both areas.

Before the structural adjustment, the subsidies of the dairy products profited to the urban habitants 2.35 times more than to the rural ones in 1980. After, the inequity fell to ratio of 2 in 2000. During the period 1980-2000, the share of the subsidy in the income decreased by 50%. For oils<sup>5</sup>, the urban inhabitants benefited from the subsidies more than the rural ones during the same period (1.15 in 1980 and 1.17 in 2000) because of greater seed oil consumption in this area until 2000. The share of these subsidies in the income remains higher in rural area.

The effect of the subsidy on the distribution of the peasant income (Tab.7) shows that the income growth between 1980 and 1995 is lower (178%) than that of the subsidy (233% for cereals, 407% for milk and the dairy products and 643% for oils). With the subsidy reforms, the income evolution (50% increase) becomes higher between 1995 and 2000 (32% decrease for cereal subsidies, 47% decrease for milk and the dairy products and 42% decrease for oils).

Generally, although the subsidy per capita is more important in urban than rural area, it tends to decrease in favor of the rural populations, as well as its share in the income. This confirms that a better equity in the distribution of the subsidies is in place. In addition, the higher increase of the rural population income, in comparison to that of the subsidies, indicates the more and more frequent use of the direct income transfer to the detriment of the subsidies in order to protect social welfare.

<sup>5</sup> For lack of availability of the data by type of oils in 1980, the analysis related to the whole of oils (of olive and seeds)

**Tab. 6. Evolution of the subsidies of the main basic products**

	Average subsidy/capita (Dinars)		Report	Leaves the subsidy %	
	U.A*	R.A**		U.A	R.A
<b>Cereals</b>					
1980	7,784	7,092	1,1	2,3	4,5
1995	24,424	23,321	1,05	2,0	4,0
2000	16,024	15,772	1,02	1,0	1,8
<b>Dairy products</b>					
1980	0,644	0,273	2,35	0,194	0,174
1995	3,115	1,385	2,25	0,258	0,238
2000	1,517	0,741	2,00	0,096	0,086
<b>Oils</b>					
1980	1,063	0,923	1,15	0,3	0,6
1995	8,541	6,856	1,25	0,7	1,2
2000	4,667	3,993	1,17	0,3	0,5

\* U.A: Urban Area, \*\*R.A: Rural Area

Source: Our calculations using data from INS

**Tab. 7. Effect of the subsidy on the distribution of basic income in rural area**

	1980		1995		2000
Average real income (DT)	19,4		53,9		80,2
Average annual increase (%)		178		50	
cereals subsidies (DT)	7,0		23,3		15,8
Average annual increase (%)		233		-32	
Dairy products subsidies in (DT)	0,273		1,385		0,741
Average annual increase (%)		407		-47	
Oils subsidies (DT)	0,923		6,856		3,993
Average annual increase (%)		643		-42	

Source: Our calculations using data from INS

## Conclusion

The analysis of the determining political components of poverty reduction in rural areas was approached in this article through the analysis of the food safety policies. It relates to the policies of supply, and fight against poverty. These instruments can be applied either in the macro-economic field or the micro-economic one. The assessment of these policies shows that the programs against poverty, carried out as complementary measures to the Program of Structural Adjustment, are numerous and very rich in experiences. They are based more and more on assistance programs directed towards productive actions. The switch from a policy of offer characterized by strict control and the State monopoly over the collection, the import, the export and the distribution of the products to a more liberal policy made it possible to improve the performances and competitiveness of the agricultural sector. The effects were also positive on the employment, the migration and the food availability in rural areas. The self targeting of the subsidies by the “physical” differentiation of the products improved the budgetary cost of these transfers, the equity and the food and nutritional situation of the poor. The increase in income of the rural inhabitants and the decrease of the subsidies, indicate the higher use of the direct income transfer.

Considering the larges number of stakeholders and structures having a direct or indirect effect on food safety, this analysis must be widened by the study of the effectiveness of this system in terms of governance (coordination, ties, etc.). In addition, the analysis of the food safety in the rural households remains limited to the aspects of the agrarian structures and of quality, hygiene and healthiness of the foodstuffs and with the political measures in favor of the rural populations.

In addition, vis-à-vis the challenge of the free trade of the agricultural products with the European Union by 2010, the question of food safety would be likely to arise with acuity. This would lead to dealing with food safety in rural area while seeking the comparative advantages and the competitiveness of the small farms. How would the 387000 small farms bear international competition? Is it necessary to continue to grant subsidies on the basic commodities, especially cereals? In other words, facing this challenge, what would be the capacity of the agricultural sector to bear the weight of the rural populations which make a part or totality of their incomes from agriculture? Several analysis attempts were carried out in this direction (Ferjani, 2003; Bachta, 2003; WB, 2006; Emlinger et Al 2006), but the opinions remained undecided between optimistic and pessimistic scenarios.

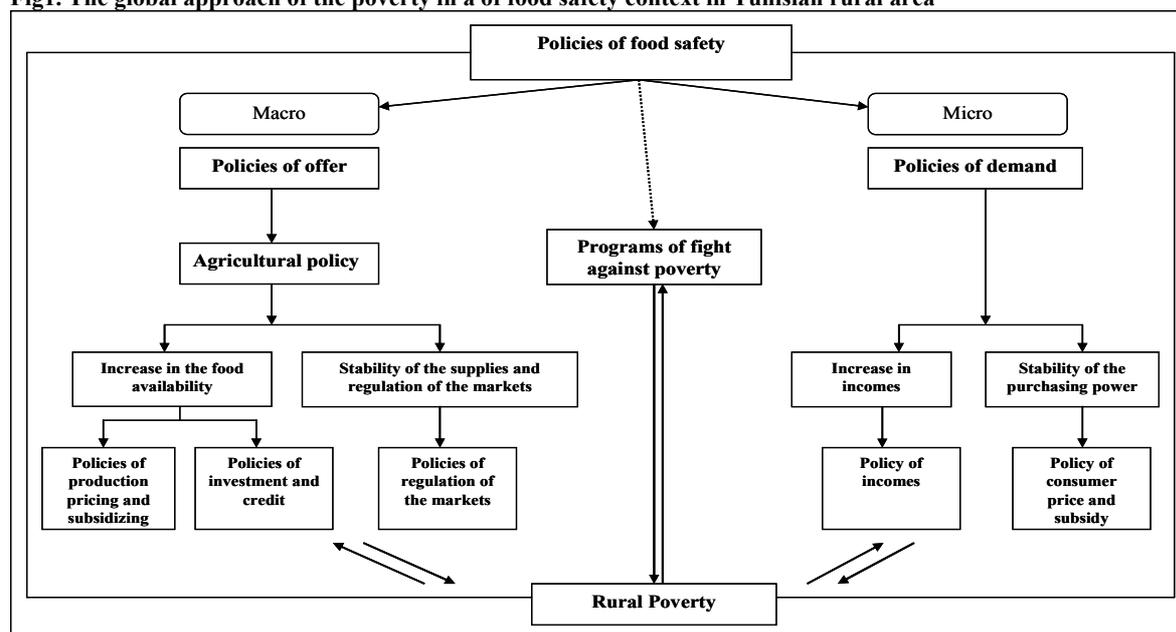
## References

- ABAAB A. ; ELLOUMI M. ; MEZGHANI C., 2000. « Le développement rural en Tunisie : politiques et mutations de l'espace et de l'économie rurale ». In Agriculture Familiale et Développement rural en Méditerranée, Karthala-CIHEAM, Paris, pp.446-500.
- ALDERMAN H., 2002. «Subsidies as a Social Safety Net: Effectiveness and Challenges». Washington, DC: World Bank, Social Protection Discussion Paper, 0224.
- ARAUJO BONJEAN C. ; CHAMBAS G., 1999. «Ajustement des finances publiques et développement agricole au Maroc et en Tunisie : 1980-1995 ». Revue Région et Développement, n°9, pp.131-152.
- AUDINET TUNISIE, 2007. « Tunisie Financement des projets agricoles ». Article de presse. In [www.investir-en-tunisie.net](http://www.investir-en-tunisie.net). 3 p.
- AYADI M. ; BOULILA G. ; LAHOUEL. M ; MONTIGNY P., 2005. « La croissance pro-pauvre en Tunisie ». Traduction de l'étude « pro-poor Growth in Tunisia », financée par l'Agence Française de Développement et la Banque Mondiale. 55p.
- AYADI M. ; EL LAGHA A. ; NAOUEL C.H., 2006. « Analyse de la pauvreté et des inégalités en Tunisie entre 1988 et 2001 : une approche non-monnaire ». Présenté à la 5<sup>ème</sup> Réunion Générale du réseau de recherche en Politiques Economiques et Pauvreté, juin 18-22, Addis-Ababa, Ethiopie. 45p.
- BACHTA M.S.; BEN MIMOUN A., 2003. «Evaluation des principaux impacts de la libéralisation des échanges des produits agricoles sur les performances du secteur agricole en Tunisie ». Projet PARPAA, CIHEAM-IAMM. 33p.
- BENSON T., 2004. « Africa's food and nutrition security situation –Where are we and low did we get here? ». Background paper prepared for the 2020 Africa Conference, “Assuring. Food and Nutrition Security in Africa by 2020: Prioritizing Actions, Strengthening Actors, and Facilitating Partnerships”. Draft Kampala (Uganda), 1-3 April. 73p.
- BIBI S.; DUCLOS J-Y., 2004. « Poverty-Decreasing Indirect Tax Reforms: Evidence from Tunisia ». Cahiers de recherche, 0403. 28p.
- BANQUE MONDIALE, 2006. « Examen de la politique agricole en Tunisie ». Rapport n°35239-TN. 108p
- BOUGHANMI H., 1995. « Les principaux volets des politiques agricoles en Tunisie : évolution, analyse et performances agricoles ». In Options Méditerranéennes, « Les agricultures maghrébines à l'aube de l'an 2000 ». Série B, CIHEAM, n°14, pp127-138.
- CHEMINGUI A. ; THABET C., 2006. « Agricultural Trade Liberalization and Poverty in Tunisia : Micro-simulation in a General Equilibrium Framework ». A paper presented during the 5<sup>th</sup> PEP Research Network General Meeting, June 18-22, Addis Ababa, Ethiopia.
- CHEMINGUI M.A., 2003. « Food security in Tunisia : Trends and policy options ». Research in Middle East Economics, Vol.5, pp.187-207.
- CHEMINGUI M.A.; CHOKRI, Th., 2001. « Internal and External Reforms in Agricultural Policy in Tunisia and Poverty in Rural Area ». Paper written for the Global Development Network Medal Competition, December, Tunis.
- CENTRE NATIONAL DES ETUDES AGRICOLES (CNEA), 2005a. «Etude de la filière des céréales ». Revue du secteur agricole. 171p.
- CNEA, 2005b. « Etude de la Filière Fruits et Légumes ». Revue du secteur agricole, pp.1-54.
- DHEHIBI B.; GIL J.M., 2003. « Forecasting food demand in Tunisia, under alternative pricing policies ». Food Policy, Vol.28, n°2, pp.167-186.
- ELLOUMI M., 2006. « L'agriculture Tunisienne dans un contexte de libéralisation ». In Région et Développement, n°23, pp.141-160.
- EMLINGER, C. ; JACQUET, F. ; PETIT, M., 2006. « Les enjeux de la libéralisation agricole dans la zone méditerranéenne ». In Région et Développement, n°23, pp.41-72.
- FAO, 1995. « Évaluation du programme de développement rural intégré ». Rapport d'évaluation, 55 p.
- FERJANI, A., 2003. « Equilibre sectoriel, équilibre général : modélisation de l'impact de la libéralisation sur l'agriculture et l'économie tunisiennes ». Thèse de Doctorat en Sciences Economiques Université Montpellier 1- Soutenue le 30 avril 2002, n. 57, 295 p.
- FONDS INTERNATIONAL DU DEVELOPPEMENT AGRICOLE (FIDA), 2001. «Comment mettre fin à la pauvreté rurale». Rapport 2001 sur la pauvreté rurale. 268p. In [www.ifad.org](http://www.ifad.org).
- Fond de Solidarité Nationale, 2004. In [www.tn.undp.org](http://www.tn.undp.org).
- GHAZOUNI S.; GOAIED M., 2001. « The Determinants of Urban and Rural Poverty in Tunisia ». Economic Research Forum on Tunisia. 22p.
- GHERSI G.; MARTIN F., 1996. « Pour une approche renouvelée et intégrée de la sécurité alimentaire ». Agroalimentaria, n°2.
- INSTITUT NATIONAL DE LA STATISTIQUE (INS), 2004. « Rapport Annuel sur les Indicateurs d'Infrastructure », n°8. 165p.

- INS. « Enquête nationale sur le budget, la consommation et le niveau de vie des ménages ». Volumes A et B (divers numéros : 1980,1985,1990,1995,2000)
- KHALDI A., 1998. « Rôle de l'agriculture tunisienne dans le processus de développement et la lutte contre la pauvreté ». Mediterranean Development Forum, Economic Development and Poverty Reduction Workshop. Marrakech, Morocco, sept 3-6, 1998. .
- KHALDI R. ; OUESLATI A., 2004. « Analyse de l'évolution de la consommation alimentaire des tunisiens durant les trois dernières décennies ». Séminaire sur la surveillance alimentaire et nutritionnelle en Tunisie : la recherche au service de la décision. Tunis, Tunisie, Nov. 2004.
- KHALDI R. ; NAÏLI A., 1995. « Analyse des politiques de la sécurité alimentaire en Tunisie ». In Options Méditerranéennes - Sécurité alimentaire en Méditerranée, Série.A, CIHEAM, n°26. pp. 91-109.
- KHALDI R., 2007. « Les subventions alimentaires en Tunisie ». Document. Polycopié cours IAM Montpellier, module « Politiques alimentaires et rurales, marchés et négociations internationales », Fév. 2007.
- MINISTERE DE L'AGRICULTURE ET DES RESSOURCES HYDRAULIQUES (MARH), 2006. Enquête sur les structures des exploitations agricoles 2004-2005. 917p.
- PADILLA M., 1997. « Food security in African towns: The role of food supply and distribution systems ». Communication delivered to the Sub-regional FAO-ISRA. Seminar "Food supply and distribution in francophone African Towns", Dakar.
- PETIT M. ; GNAEG Y.S., 1995. « Sécurité alimentaire et pauvreté ». In Options Méditerranéennes - Sécurité alimentaire en Méditerranée, Série A, CIHEAM, n°26, pp12-20.
- PETIT M., 2002. «Géostratégie : la place de l'alimentation dans les rapports internationaux», Déméter 2003, Paris, Armand Colin, 2002, pp.61-86.
- PINSTRUP-INDERSEN P., 2002. «Food and agriculture policy for a globalizing world: Preparing for the future ». American Journal of Agriculture Economics, Vol.84, n°5, p.1201-1214.
- PNUD, 2004. « Stratégie de réduction de la pauvreté : Etude de la pauvreté en Tunisie ». 114 p.
- REPUBLIQUE TUNISIENNE, 1996. Document de Position nationale sur la situation de la sécurité alimentaire en Tunisie. Sommet Mondial de l'Alimentation., Rome, nov. 2006, 54p.
- SASSON A., 1996. « Sécurité alimentaire : enjeux et débats». Cahiers Agricultures, Vol.5, n°4, John Libbey Eurotex, Paris, pp.215-219.
- SELMI S.; ELLOUMI M.; ABAAB A., 2005. « Le développement rural en Tunisie ». In "Les défis de la terre : l'agriculture en Espagne et en Tunisie face aux nouveaux défis de la libéralisation ». Cérès Editions. 330p.
- SEN A., 1981. « Poverty and Famines: An essay on Entitlement and Deprivation ». Oxford, Clarendon Press.
- TUCK L.; LINDERT K., 1996. «From Universal Food Subsidies to a Self-Targeted Program: A Case Study of Tunisian Reform». World Bank, Discussion Paper, n°351. Washington, D.C.
- WORLD BANK, 1995. « Poverty Alleviation, Preserving Progress while Preparing the Future ». Volume I- Main Report and Volume II, Annex, Report n° 13 993-TUN, MENA Region.
- WORLD BANK, 2003. « Poverty Update ». Volumes I, II-A and II-B, MENA Region, August 2003.

## Appendices

**Fig1. The global approach of the poverty in a of food safety context in Tunisian rural area**



**Tab.1. Evolution of production prices for the main investments in agricultural production (1986= bases 100)**

Produits	Année	1990	1995	2000	2004
Durum wheat		153	172	184	184
Bread wheat		131	150	162	163
Barley		136	182	155	155
Milk		126	143	157	165
Olive oil		191	247	201	361
Tomato		107	130	152	151
Potato		118	145	143	117
Poulties		135	165	156	158
Eggs		124	145	125	156

Source : MARH data

**Tab.2. Evolution of the structure of the agriculture**

Year	70-79 %	80-89 %	90-99 %	00-06 %
Water resource	30	42	34	41
Breeding	13	11	13	13
Fishing	8	9	5	6
Farm equipment	23	12	11	9,2
Arboriculture	9	7	9	8,6
Storage of the cereals Studies,	0,0	3	0,0	-
Research and Extension	4	3	2	1,7
Forest and water and soil protection	8	7	12	12,3
P.I.R.D				
Others	0,0	3	3	1
	5	3	11	10,3
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

\* P.I.R.D. : Program of Integrated Rural Development

Source : MARH data

**Tab.3. The main achievements of Solidarity National Funds (1993 – 2003)**

Type of Project	Achievements		Costs (en M.D)	%
	Unit	Number		
<b>Projects of basic infrastructure</b>			153,312	21,2
Lodging	Lodging	56 335	213,624	29,5
Roads and tracks	Km	4 369	143,182	19,8
Electrifications	Family	71 733	104,399	14,4
Drinking water	Family	81 221	5,444	0,8
Health	Health centre	135	3,776	0,5
Education	School	130	12,596	1,7
Other Conveniences			87,890	12,1
<b>Generating projects of incomes</b>	Beneficiary	61 471		
<b>TOTAL</b>			<b>724,223</b>	<b>100</b>

Source : Solidarity National Funds, 2004

**Tab.4. Evolution of the rates of self-sufficiency for the main agricultural products (%)**

	81-85	86-90	91-95	96-00	01-05
Durum wheat	76	59	84	78	77
Bread wheat	27	19	22	21	27
Total wheat	57	40	56	53	59
Barley	89	61	64	65	91
Total cereals	64	45	58	55	49
Oils	90	58	91	70	67
Beef and veal	69	74	78	92	98
Dairy products	57	67	88	92	88

Source: Our calculations from MARH data

**Tab.5. Evolution of agricultural production (1000T)**

Year	81-85	86-90	91-95	96-00	01-05
Cereals	1300	1026	1587	1697	2081
Durum wheat	744	568	958	1074	1127
Bread wheat	174	151	206	225	246
Olive oil	525	503	845	865	622
Fruits	142	185	259	330	789
Potato	137	187	216	291	327
Vegetables	337	402	458	505	2113
Beef and veal	29	34	40	47	96.5
Sheep meat	28	34	37	44	104
Meats of poultries	42	44	53	72	128
Eggs (M.pieces)	910	1027	1053	1366	1462
Milk	278	366	483	872	910
Seafood	70	94	87	89	101.7

Source : INS