

**Food Security Information System for Tubas, Hebron and Bethlehem  
Governorates (FSIS)**

**Household Baseline Surveillance Report  
Tubas Governorate**



*Conducted by*  
**Applied Research Institute-Jerusalem (ARIJ)**



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### **1. Project Background**

The FSIS project "*Food Security Information System in Tubas, Bethlehem, and Hebron Governorates*" is a one of the approved projects by CAP 2008 in the oPt under food aid and food security sector. It is funded by Spanish Cooperation and implemented in the year 2008-2010. The project comes in response to the food insecurity status in the oPt especially in Tubas, Bethlehem and Hebron governorates, where the largest percentage of food insecure population exist (33%, 15%, 33% respectively)<sup>1</sup>. The project aims at investigating food security and vulnerability status of the vulnerable households of Tubas, Hebron and Bethlehem governorates, and improving awareness and capacities of stakeholders to assist them in developing proper food security strategies, through creating food security information system (FSIS). The project aims at improving the awareness of food insecure and poor households toward better food practices and supporting the poorest of the poor to increase their food production activities in a sustainable approach. During the implementation of the project an analytical study was conducted to improve the understanding of the Palestinian socio-economic and nutritional health status, causes behind food insecurity over the different life sectors, the nutritional performance of Palestinian poor peoples, the poor people awareness about better nutritional food intake performance, and to investigate the current nutritional diseases due to the imposed reduction in amount, quality and type of food eaten by poor people. In addition, the project is tackling the issue of improving poor households' food production capacities and income generation sources, through the implementation of agro-developmental activities in the poorest targeted areas. The project results are disseminated to relevant stakeholders and organizations through its web-database (<http://foodsecurity.arij.org>), awareness campaigns, and activated networks.

### **2. Project Specific Objectives**

- To formulate the project stakeholders, decision makers and advisory committees to select the targeted communities, empower and sustain the projects activities.
- To create a food security information system based on surveying and analyzing food insecurity and nutritional health indicators based on the FAO, WFP and WHO standards.
- To prepare specialized awareness materials and conduct awareness programs to targeted community regarding food intake, food hygiene, nutritional health and food insecurity coping strategies.
- To enhance stakeholders and decision makers' coordination in the field of food insecurity and nutritional health (FINH), through creating a coordination body, and assisting in capacity building of related governmental bodies.
- To implement some agro-developmental activities on a household level to improve food production capacities and income generation sources.

### **3. Project Baseline Methodology**

The design and implementation of the FSIS project was done based on consultation with several national and international institutions including the Ministry of Agriculture (MoA), Ministry of Health (MoH), the World Food Program (WFP), Food and Agriculture Organization (FAO), UNRWA, the Food Security Working Group as part of the Consolidated Appeal Program / OCHA and others. Such coordination with relevant

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<sup>1</sup> WFP/FAO, 2009. Socio-Economic and Food Security Report West Bank Survey (SEFSec report).

stakeholders has enriched the quality and quantity of information sets available and has positively directed the project activities towards better methods of interventions' achievement, in addition it has raised the accuracy of collected information at governorate, locality and household level and has helped avoid any overlap of implemented interventions in the at same geographical area.

While conducting the baseline survey in the Tubas governorate, additional contacts and coordination with stakeholders at governorate level including active local and international NGO's, and local governmental institutions took place.

Several steps was accomplished before starting the baseline survey at household level including specifying the poor and most vulnerable marginalized areas / localities at Tubas governorate and specifying the most needy households at each targeted localities to be surveyed. To facilitate selection of the poorest localities and households, the coordination with relevant stakeholders and the empowerment of project activities, several committees were formulated: the FSSC (Food Security Stakeholders Committee), GSC (Governorate Stakeholders Committee- Tubas governorate), and CC (Community committee- at each targeted locality) committees.

FSS-Committee was formed from the relevant decision makers, planners, implementers and donors on national, regional and international level including MoA, MoH, WPA, PCBS, FAO, WFP, UNRWA, OXFAM, AECID (photo 3.1). The committee's main role was empowering and directing the project activities and supporting the project findings and recommendations through developing national approach towards sustainable improvement in food security.



*Photo 3.1: Food Security Stakeholders Committee*

Governorate Stakeholders Committee– Tubas Governorate, was formed from local decision makers, planners, implementers and donors on national, regional and international levels at Tubas Governorate level including related local NGO's such as LRC, UAWC, Ma'an, PARC, ESDC; international NGO's such as ACF, UNRWA, CARE; directorates of authority such as MoA, MoH, MoSA, and others (photo3.2). The main role of GSC was selecting the most vulnerable communities and facilitating the project studies and surveys at locality level.



*Photo 3.2: Governorate Stakeholders Committee-Tubas Governorate*

Food Security Community Committees (FSCCs) were formulated in the 13 targeted communities in Tubas Governorate, where the community related villages councils, women associations, health centers, agricultural unions in the targeted communities are members in the committees (photo 3.3). The main role of the FSCCs was manifested in developing the selection criteria for the targeted communities and the final list of selected households at targeted communities and in facilitating the project team activities, while conducting field/ baseline and blood test surveys and awareness programs mainly key community women trainings.



*Photo 3.3: Community Committee*

Following the formulation of the national, governorate and locality committees, the project targeted localities and households at Tubas Governorate were specified, where 13 most vulnerable villages at Tubas Governorate and 278 poor households were short listed after a selection process. The process of selection was conducted in a way to ensure the appropriate selection for the poorest localities, where two steps were considered as following: first MoSA, UNRWA, and WFP were consulted for providing the FSIS project with a list for the most vulnerable areas (rural areas) in Tubas Governorate according to each institute standards and criteria. Accordingly and with the help of ARIJ GIS (geographical information system) the locality that was set as vulnerable by more than one institute was short listed; second the short list of most vulnerable localities in Tubas Governorate were presented for Governorate Stakeholders Committee - Tubas Governorate, who justified the selection and agreed on a final list of most needy villages in the governorate.

The 278 baseline households at locality level were selected based on the recommendations of the formulated Food Security Community Committees (FSCCs) in the 13 targeted communities of Tubas Governorates, where a list of household names were provided by the committees of each selected locality stamped and signed by the committee itself. In addition, ARIJ working team has conducted a refining procedure for the selected household lists by either visiting a sample of households or through its working experience in the selected villages, and accordingly only those considered the poorest households were selected.

Other steps were necessary before conducting the baseline survey including the preparation of the questionnaire template based on identified FINH (food insecurity and nutritional health) indicators, which were used in the baseline survey at household level after revision and refining of project specialists and FSSC. The questionnaire selected indicators were reviewed based on:

- Previously conducted relevant projects such as the Socio-economic and Food Security Atlas project, taking into consideration the project's developed indicators, database, and mapping system.
- FAO, WFP and WHO standards that suit the Palestinian situation.
- Revision and follow up of formulated Food Security Strategic Committee (FSSC).
- Refining of questionnaire through testing and evaluating the questionnaire in the field where 60 samples were filled and

analysed; accordingly minor modification were done on the questionnaire template.

The questionnaire template (photo 3.4) was covering the following main aspects:

- Identification data including questionnaire code, governorate and locality name, type of location, name of head of household, date of filling the questionnaire and identification data concerning interviewer.
- Demography including household members, and housing characteristics, information on pregnant women and children.
- Socio-economic including labor force and employment, type of work, income and expenditures (on food and non-food commodities), and households' assets (including water and electricity networks, refrigerator, washing machine, etc.), changes on expenditures (details on reduction on food expenditures including quality and quantity, food on credit, etc.).
- Food security and poverty indicators including food utilization, access to food, food insecurity worries, food consumption, and food dietary diversity.
- Education and health indicators including household members attending schools and / or universities, number of disabilities and type, number of diseases and type with focus on those in relation to mal-nutrition, and number of households that have health insurance.
- Assistance and type of assistance, coping strategies and mitigation plans / households' vulnerability, and aids satisfaction.
- Household available assets including land, water, agricultural production (plant and animal production).
- The questions included in the survey were correlated with common indicators of poverty and food consumption, sensitive to changes at household situation over time, useful to measure general food security and nutritional health status and related activities.



The baseline survey was conducted in the 13 targeted localities in Tubas Governorate including: Al 'Aqaba, Al Hadediya, Al Malih, 'Aqqaba, Bardala, 'Ein el Beida, Ibziq, Kardala, Khirbet A'tuf, Khirbet Yarza, Salhab, Tammun, and Tayasir (map 3.1 and table 3.1), where 278 household questionnaires were filled.

<b>Table 3.1: Total targeted localities and households in Tubas Governorate</b>	
<b>Name of Targeted Locality</b>	<b>Number of Targeted Households</b>
<b>Al 'Aqaba</b>	<b>5</b>
<b>Al Hadediya</b>	<b>5</b>
<b>Al Malih</b>	<b>19</b>
<b>'Aqqaba</b>	<b>25</b>
<b>Bardala</b>	<b>41</b>
<b>'Ein el Beida</b>	<b>30</b>
<b>Ibziq</b>	<b>10</b>
<b>Kardala</b>	<b>20</b>
<b>Khirbet A'tuf</b>	<b>10</b>
<b>Khirbet Yarza</b>	<b>5</b>
<b>Salhab</b>	<b>6</b>
<b>Tammun</b>	<b>67</b>
<b>Tayasir</b>	<b>35</b>
<b>Total</b>	<b>278</b>

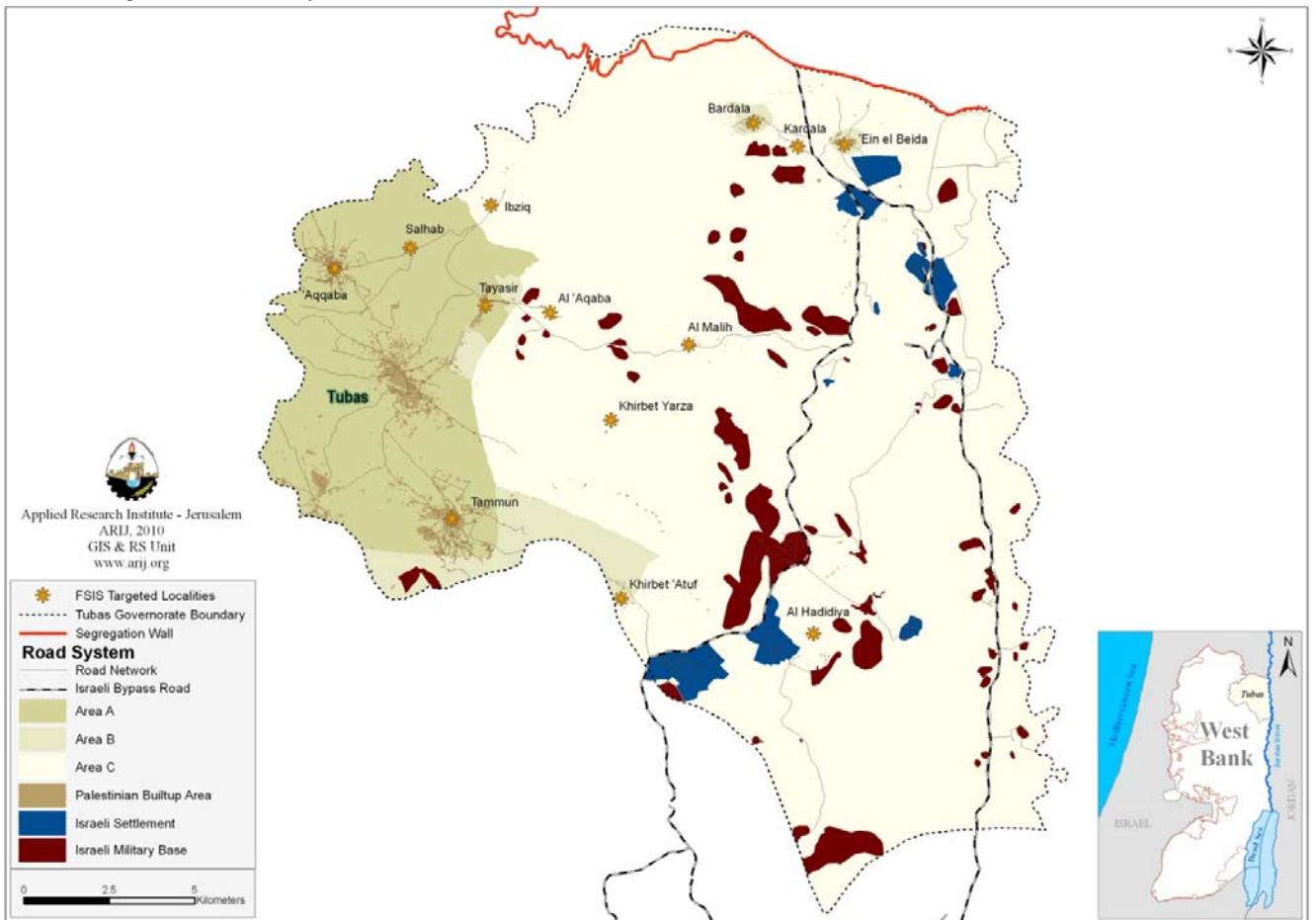
During the questionnaires filling; the sample size per targeted locality, the selected method for sampling at the different communities were all taken into consideration as following:

- a. A balanced sample size of households in the targeted communities in Tubas Governorate was measured using the comparison system of household number at locality level. For example, Tammun town had the highest number of households (almost 24% of total number of households of the selected villages in the Tubas Governorates), and accordingly almost 25% of the questionnaires went to households at Tammun village.
- b. Consulting the community committee at each locality and UNRWA list of vulnerable households at the three governorates when selecting the vulnerable households per locality.
- c. The GIS applications were taken into consideration when selecting the houses using mapping system to locate the surveyed households. Each house was given a tag number and a code so as to facilitate the households' tracking procedure during the survey.
- d. The interviewers are well trained for conducting baseline surveys including explaining the questions, appropriately asking the questions and getting the needed data out of the survey.

It is worth noting that the questionnaires were coded in relation to governorate, locality and household code and the collected data were refined and modified and then entered into a specialized analysis program; SPSS program. The entered data was assessed for its Validity and Reliability. The 278 questionnaires were analyzed and documented as a raw database with all indicators studied in the questionnaire included. It was presented as a



web-based database which facilitates access within a search system on the web. All questionnaires were also documented as hard copies and their data was filled as a soft copy. All field visits were also documented as field visit reports and photos were taken throughout the survey.



*Map 3.1: Tubas Governorate targeted villages – FSIS project*

#### **4. Background about Tubas Governorate**

**The Tubas Governorate has a total area** of 393,587 dunums (393.6 km<sup>2</sup>) and is located in the north eastern part of the West Bank; it is bordered by Jenin Governorate and Armistice Line to the north, Nablus and Jericho Governorates to the west and south, and Jordan valley to the east. The Tubas Governorate extends on a high plain area that slides eastward towards the Jordan Valley. It is located west of Jordan River and south of Bissan plain; the area is also rich in springs and flood streams. Tubas Governorate is considered a main agricultural area in Palestine and a significant land for animal grazing due to soil fertility, water availability and relatively warm weather. The administrated communities are 23 Palestinian localities in the Tubas Governorate; 3 localities of which are run by municipality councils, 6 localities by village councils and the rest are managed by project committees. The largest locality in Tubas Governorate by area is Tubas city, which extends over 295,123 dunums, followed by Tammun, which extends over 81,000 dunums. The smallest locality by area is El Far'a Camp with 225 dunums followed by

Khirbet Kardala with 800 dunums. Palestinian built-up areas comprise 1.31 % of the total area of the Tubas Governorate.

***The total population of the Tubas Governorate*** in 2007 was 50,261 forming about 2.14% of the total population of the West Bank with 49.2% females of total governorate population<sup>2</sup>. It is estimated that almost 44.6% of the population has increased since the year 1997, where the highest population density concentrated in the geopolitical Area "A", reaching up to 653 persons/km<sup>2/3</sup>.

According to the PCBS classification<sup>4</sup> for the types of the Palestinian communities and the 2007 census, about 66.6% of the population in the Tubas Governorate live in urban areas, and 22% of the population live in rural areas, while 11.4% live in refugee camps.

***In terms of economy, the Tubas Governorate*** registered 12% unemployment rate in 2010 compared with an average of 16.5% for the West Bank. The labor force forms 42.7% of the population. The average daily wage is up to 89 NIS<sup>5</sup>. However, 11.5 % of the Tubas population are unpaid family members. It is worth noting that 65% of Tubas inhabitants work in the Tubas Governorate itself, 21% work in other governorates of the West Bank, and 14% work in Israel and Israeli settlements<sup>6</sup>.

The PCBS census in the year 2007 showed that the Tubas Governorate has a large average family size equal to other West Bank Governorates with 5.6 persons per household. The average household size of the West Bank was 5.5 persons per household. These large families increase food consumption and household expenses. Up to 42.6% of the households in Tubas Governorate considered poor as one of the wealth quintiles index measured by SEFsec survey in the year 2009<sup>3</sup>. Poverty and deep poverty in the year 2007 stood at 23.6 percent and 3.2 percent in the West Bank respectively<sup>7</sup>.

***The basic causes of food insecurity***, on the other hand, translate into underlying and immediate causes of poverty and food insecurity at the household level, These causes include limitations on food availability, negative effects on agricultural production, food trade/market supplies, insufficient economic access to food, artificially high prices but few opportunities to secure employment and higher household incomes; and impaired food utilisation: poor water, poor sanitation, poor hygiene, a lack of access to health care, and a declining quality of diet.

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<sup>2</sup> Palestinian Central Bureau of Statistics 2009, Population, Housing and establishment, Census -2007, Final Results

<sup>3</sup> ARIJ/WFP. Socio-Economic and Food Security Atlas: in the occupied Palestinian territory. February 2010

<sup>4</sup> \*An urban area is any locality whose population amounts to 10,000 persons or more. This applies to the entire Governorates' centers regardless of their size. Additionally, it refers to all localities whose population varies from 4,000 to 9,999 persons provided they have at least four of the following elements: a public electricity network, a public water network, a post office, a health center with a full-time physician and a school offering a general secondary education certificate.

\*A rural area is any locality whose population is less than 4,000 persons or whose population varies from 4,000 to 9,999 persons lacks four of the aforementioned elements.

\*A refugee camp is any locality referred to as a refugee camp and administrated by the United Nations Relief and Work Agency for Palestinian Refugee in the Near East (UNRWA).

<sup>5</sup> Palestinian Central Bureau of Statistics, 2010. *Labor Force Survey: Annual Report: 2010*

<sup>6</sup> Palestinian Central Bureau of Statistics 2009, Population, Housing and establishment, Census -2007, Final Results

<sup>7</sup> Palestinian Central Bureau of Statistics, 2010. *Labor Force Survey: Annual Report: 2009*



Due to strict measures and difficult economic conditions as well as natural crises such as drought and limited water resources, the economical status of the Tubas Governorate is deteriorating. Approximately 32.8% of households in the Tubas Governorate were found food-insecure during the second trimester of 2009<sup>8</sup>, in comparison to 25% in the West Bank. This represents nearly 16,285 food-insecure people, with another 7,288 persons who are vulnerable to food insecurity (14.5%); 13,269 persons are marginally secure (26.4%), and 13,219 persons are food secure (26.3%) (figure 4.1). Food-insecure households in the Tubas Governorate are unable to secure sufficient income to meet their essential food and non-food requirements<sup>9</sup> mainly due to the lack of income-earning possibilities. This status is causing families to decrease their intake of food items in terms of quality and quantity, and it is worsened by the impoverishment process that started in the year 2000.

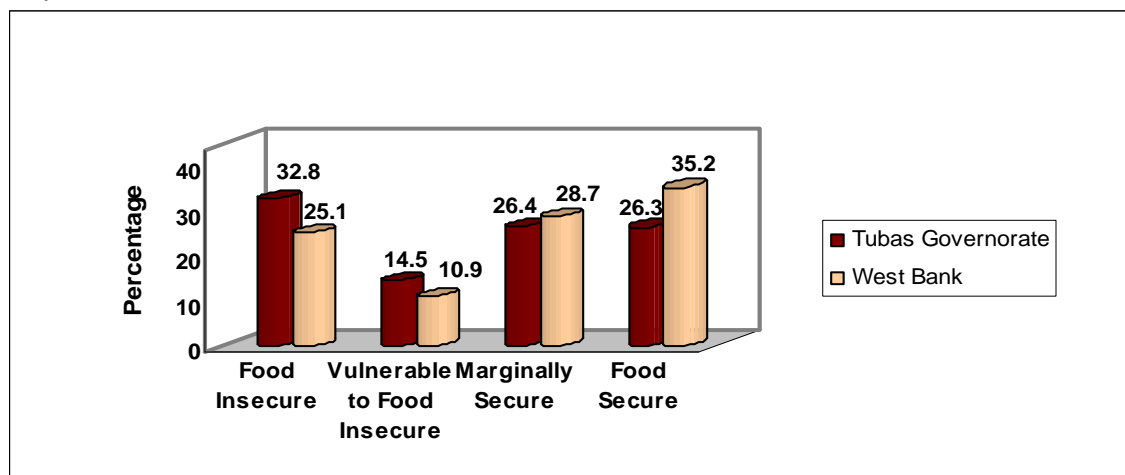


Figure 4.1: Food security levels in the Tubas Governorate, 2009

Food-price increases have significantly worsened the food-security situation of households in the Tubas Governorate, as a high share of household expenditures (58%) goes toward food. Between 2005 and 2009 the price of several food commodities, mainly rice, flour, lentils, and red meat, increased significantly in the Tubas Governorate by 48%, 37%, 50% and 36% respectively<sup>10</sup>. Fruits and vegetables are the only groups of food items that experienced only a small rise in prices over the same period.

Palestinians are increasingly being forced to rely on negative coping mechanisms. The combination of decreased incomes and increased food prices has forced the poorer households to change their food consumption patterns. Almost 53.3% of the Tubas Governorate residents reduce their food expenditures as a main coping strategy, forcing these families to buy fewer food items and to substitute normal foods with cheaper/less desirable items. Food reduction mainly on quantity of meat purchased/consumed reaches up to 49.4 % of the Tubas Governorate households that have adopted this strategy. However, even if the coping mechanisms are reversible (e.g., switching to less preferred

<sup>8</sup> ARIJ/WFP. Socio-Economic and Food Security Atlas: in the occupied Palestinian territory. February 2010

<sup>9</sup> Households with income and consumption below 1.6\$/capita/day and Households showing a decrease in total, food and non-food expenditures, including households unable to further decrease their expenditure patterns.

<sup>10</sup> Palestinian Central Bureau of Statistics: Food Prices Survey, 2005-2009.

but cheaper food, decreasing the amount of food consumed, forgoing health or education expenditures, and purchasing food on credit), they can have a permanent cost on lives and livelihoods, through poorer health and nutritional status.

*As a consequence, the health status of the governorate* is deteriorating. Children are the most adversely affected by malnutrition. Poor environmental conditions may increase infections and contribute to environmental deficiencies in micronutrients. Additional factors include unemployment, the poor economic situation, and food insecurity changes in household food consumption patterns, with reduced amounts of animal products, vegetables, and fruits. This contributes to a decrease in the amount of minerals and vitamins ingested. Conversely, the effects of malnutrition on individuals can result in micronutrient deficiencies in young children, which are known to delay growth. Accordingly, Iron deficiency anemia affected approximately 39.3 percent of children and 27.9 percent of pregnant women in the Tubas Governorate in mid-year 2009, compared to 45.2 percent and 27.5 percent, respectively in the West Bank<sup>11</sup>.

*The type of agriculture practiced in the Tubas Governorate* varies according to region, but in general, it can be divided into two groups, plant production (both rain fed and irrigated), and livestock production. The Tubas Governorate constitutes 13.1% of the value of agricultural production in the West Bank, of which 8.7% is plant production and 4.4% is livestock production<sup>12</sup>. The total area of the Tubas Governorate is estimated to be 393,587 dunums, with nearly 277,567 dunums of agricultural land; of which 60,179 dunums are permanent crops (table 4.1)<sup>13</sup>. 30.9% of the labor force in Tubas Governorate works in agriculture in the year 2010.

<b>Land use / Land cover Type</b>	<b>Area in Dunum*</b>
Agricultural Land	277,567
Industrial, Commercial and Transport Unit	27,565
Wall Zone	256
Palestinian Built-up Area	5,170
Israeli Settlements	7,783
Israeli Military Base	14,650
Mine, Dump and Construction Sites	274
<b>Total Area</b>	<b>393,587</b>

\*Dunum = 1,000 m<sup>2</sup> = 0.1 Hectare

The total cultivated area in Palestine is usually categorized into 'Fruit Trees', 'Vegetables', and 'Field Crops and Forages'. The major area of plant production is rain-fed. However, irrigation is used in some parts. According to the PCBS, the total area of plant production in the Tubas Governorate in the agricultural year 2007/2008 reached 102,140 dunums with total plant production of 84,432 tons and a total value of US \$52,883 thousand. Compared to the year 1997/1998, we notice an increase of approximately 22.7% in the

<sup>11</sup> Palestinian Central Bureau of Statistics, 2009. Palestinian Family Health Survey, 2008: Final Report. Ramallah. Palestine.

<sup>12</sup> Palestinian Central Bureau of statistics, 2009. Agricultural Statistics for the year 2007/2008. Ramallah. Palestine.

<sup>13</sup> Applied Research Institute-Jerusalem (ARIJ): GIS Unit, 2006.

total planted area, a 19% increase in total production, and a 46% increase in the total production value.

Furthermore, rain-fed agriculture dominates in the Tubas Governorate, and formed 78.5% of the cultivated area in the year 2007/2008, with total production reaching 15,798 tons, which is approximately 19.8% of the total agricultural production. Although the irrigated area formed only 21.5%, its production was approximately 63,966 tons, which constituted 80.1% of the total production.

Thus, agriculture land in the Tubas Governorate is mainly cultivated under rainfed cultivation; however its main production coming from the irrigated cultivation. To sustain this viable sector, coping plans and strategies should be developed to mitigate the impact of low precipitation and bad distribution of rainfall, which has become very noticeable during the last five years. Also, irrigated agriculture forms the vital sector in agriculture production and accordingly the development of irrigated agriculture in Tubas should be considered.

Livestock production, on the other hand, during the agricultural year 2007/2008 reached 9,254 tons; forming 2,247 tons of meat (red and white), 6,990 tons of milk, 5 million of egg and 12 tons of honey in Tubas Governorate. The value of livestock production in the Tubas Governorate during the agricultural year 2007/2008 registered approximately US \$18,566 thousand with an increase of 25.3% compared to the year 1997/1998. The contributions of these sectors from the total livestock production value of the Tubas Governorate were as follows: 24.3% meat and 75.5% dairy<sup>14</sup>.

***The climate of the Tubas Governorate*** ranges from arid to semi-arid with an increase in aridity towards south and east parts. The mean annual rainfall in the Tubas Governorate is 429mm/year. The year 2007/08 witnessed lower rainfall than usual and it was considered a drought year as only 326mm of rainfall was received which formed 76% of the average annual rainfall. The year 2009 was better as rainfall quantity reached 396mm<sup>15</sup>. However it was still lower than the average annual rainfall by 8%. Rainfall amounts in the year 2010, on the other hand, fulfilled the historical rainfall average, where Tubas received 432 mm forming 101% of average historical rainfall amounts. The drought years create additional obstacles interims of family food security and their income as most of the agriculture production in Tubas is subsistence agriculture. Furthermore, most of the people who lost their work in Israel began farming their lands to produce food for their families and generate income. It is worth mentioning that 30.9% of the formal employees of the Tubas Governorate in the year 2010 were employed in the agricultural sector compared with 28.1% in the year 2000.

***The renewable water resources in the Tubas Governorate*** consists primarily of groundwater resources. The Governorate is located above the Eastern and North Eastern Basins of the West Bank Aquifer system. The main resources of drinking water in the Tubas governorate come through local resources including Tubas Municipality well (5.95%) and Tammoun well (54.33%) in addition to El Far'a local springs (17.3%).

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<sup>14</sup> Palestinian Central Bureau of statistics, 2009. Agricultural Statistics for the year 2007/2008. Ramallah. Palestine

<sup>15</sup> Al A'ghbar, Raed, and Al A'arawi, Shafeeq. Annual Rainfall Report: Season 2008/2009. MoA; Soil and Irrigation General Directorate. Palestine. 2009.

However, since these resources are not enough to fulfill the increasing need for water, they are using the agricultural wells (22.4%) as a source of domestic water usage<sup>16</sup>.

Water needs are defined as the minimum water usage required for sustaining a healthy life. Based on the World Health Organization's (WHO) recommendations, each person should receive a minimum quantity of 100 liters of fresh water per day. The Governorate's total domestic water needs were estimated by 2.758 MCM for the year 2008. Therefore, the total real deficit in domestic water supply, taking into consideration water losses, reached approximately 2.085 MCM for the whole Governorate<sup>17</sup>. This deficit is expected to worsen as the population grows. The percentage of water losses is high in the Tubas Governorate. The overall loss and uncounted for water rate was estimated to be 27 % in 2008. Taking water losses into account, it was estimated that the actual average consumption rate didn't exceed 37 liter per capita per day (l/c/d). In terms of water quality, the result of the water quality analysis for the Tubas municipality well conducted by the PWA in the year 2007 revealed that there is a high concentration of nitrate reaching sometimes to 135 mg/l, which exceeds safe nitrate concentration limits of what is recommended by the WHO.

## 5. Tubas Baseline Survey Results

### 5.1 Households Identification Data

During the baseline survey the project has targeted 13 vulnerable localities in Tubas Governorate through which 278 households were surveyed. The targeted localities formed 62% of the total number of localities in the governorate (reaches up to 21 localities) and the targeted population (live and don't live in the same house) of the localities formed 8% of the total population of Tubas Governorate (reaches up to 23,879 persons) (figure 5.1.1).



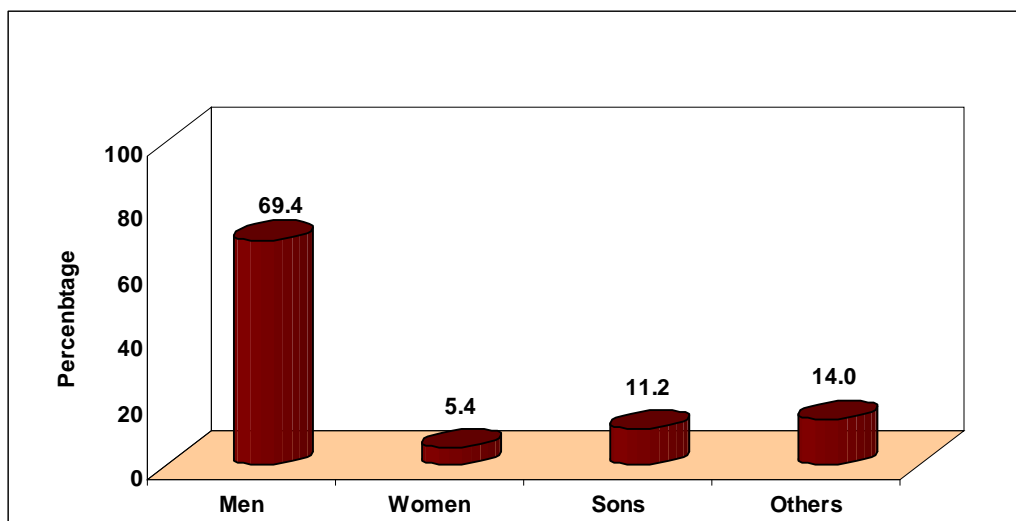
*Figure 5.1.1: Total project targeted population and localities in Tubas Governorate*

The total number of surveyed households' members live in the same house is 1,816 persons, where 49.6% are males and 50.4% are females. The average number of household member's surveyed reached 6.5 persons compared with 5.6 persons per household as was reported by the PCBS in 2007. Only 5.4% of the surveyed households are headed by women, and 69.4% are headed by men (figure 5.1.2). Children less than 16 years old formed 38.2% of the total targeted population. Up to 90.5% of the targeted household members live in the same targeted house. 9.3% of family members do not

<sup>16</sup> Palestinian Water Authority (PWA), 2008.

<sup>17</sup> Palestinian Water Authority (PWA), 2009

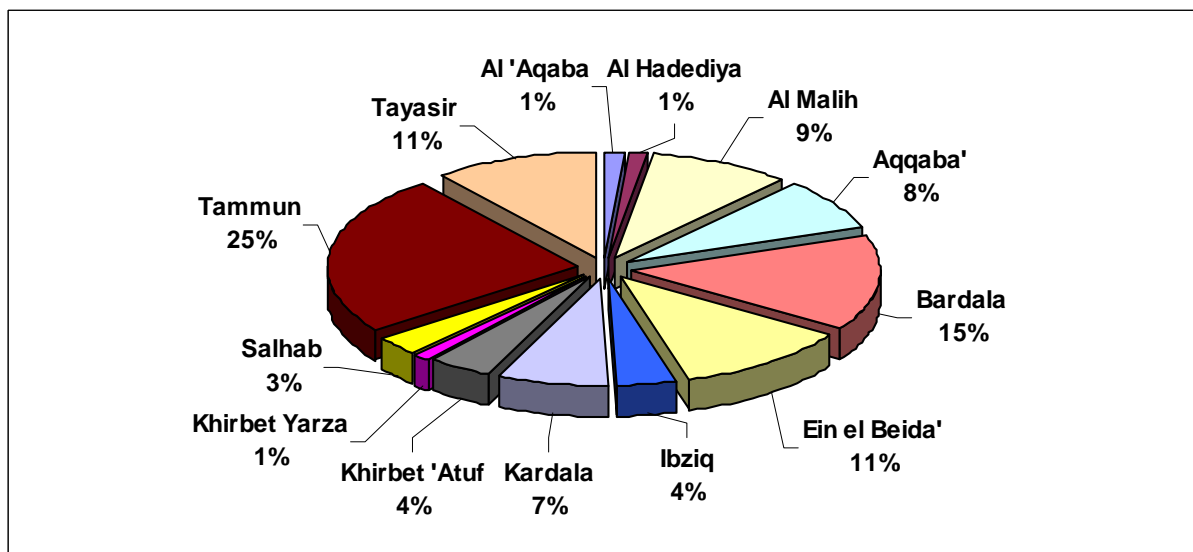
reside with their families, while 22.3% of the urban families in Tammun and 'Aqqaba do not reside with their families.



*Figure 5.1.2: Percentage of targeted households per type of head at Tubas Governorate level*

Up to 84.6% of targeted localities are classified as rural areas and 15.4% are urban areas, where 81.7% of localities are served by a municipality or a village council.

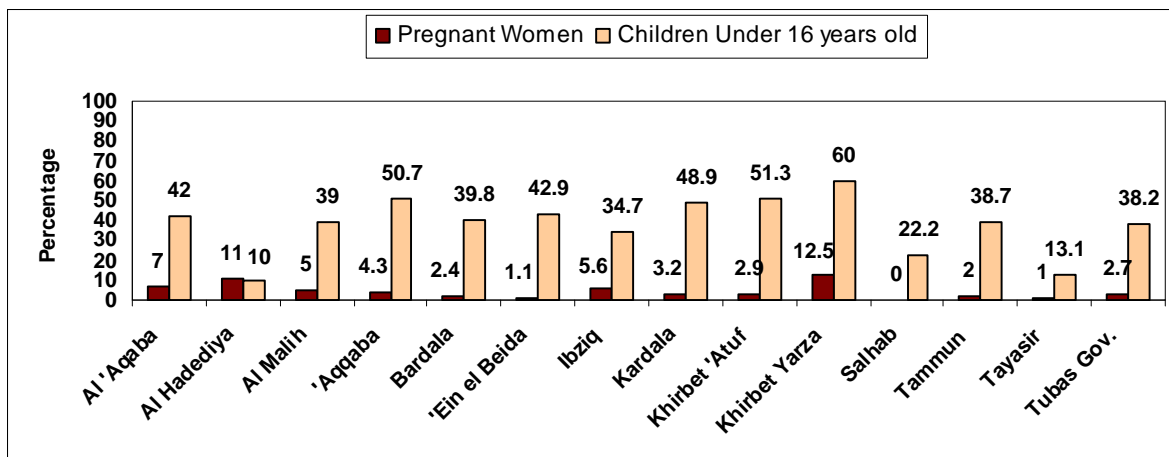
Comparing the targeted localities, Tammun city held the highest population among the targeted villages reaching up to 10795 people (forming 25% of total targeted population). In relevance to population total, the numbers of questionnaires were selected by locality and accordingly Tammun city has the highest percent of targeted households reaching up to 25% (figure 5.1.3).



*Figure 5.1.3: Percentage of surveyed questionnaires by targeted locality*

The highest percentage of pregnant women and children – less than 16 years old were also found in Tammun town, which formed 16.5% and 24.8% of total targeted

population, respectively. Investigating number of pregnant women and children in each locality it was found that Khirbet Yarza had the highest percentage reaching up to 12.5% and 60% of total Khirbet Yarza population, respectively (figure 5.1.4). The highest household size, on the other hand, was found in Salhab village reaching up to 9 followed by 6.6 in Ibbziq.



*Figure 5.1.4: Percentage of children less than 16 years old and pregnant women in a sample of targeted villages in Tubas Governorate*

## 5.2 Education Data

The percentage of targeted family members that attend school (including kindergarten) reached 34.5% of the total targeted population, in comparison to 47.8% of population attending school at governorate level in the year 2007<sup>18</sup>. Up to 41.7% are family members that attend school in Al 'Aqaba, followed by Tammun at 40.3% and Kardala at 39.7% (figure 5.2.1). Such a result is relevant to availability and access to schools and their distribution in Tubas Governorate. The females and males attending the school were almost evenly distributed reaching up to 47.7% and 52.3% of total family members attending school, respectively. The highest percentage of females attending school was in Khirbet Yarza, Al Malih and Tammun reaching up to 50%, 46.7% and 41% respectively, of total family members attending school. Such a result is relevant to the higher number of females as members of total family members at each mentioned locality.

The percentage of family members that attend higher education institutions reached 6.9% of total family members at targeted villages, in comparison to 7.7% at governorate level in the year 2007. Females attending higher education reached up to 8.2% of targeted family members. Females, on the other hand recorded a higher percentage of higher education attendance reaching up to 58% in comparison to 42% males of total family members attending higher education institutions. It is worth noting, that Tammun has the highest percentage of family members attending higher education institutions reaching 13.1%, followed by Tayasir reaching 8.9% (figure 5.2.1). The highest percentage of females attending higher education institutions was also found in Tammun and Tayasir reaching up to 15.6%, and 10% of total females in the localities, respectively.

<sup>18</sup> Palestinian Central Bureau of Statistics (PCBS). Census Final Results – Summary (population, buildings, housing, establishments). Bethlehem Governorate. December 2008.



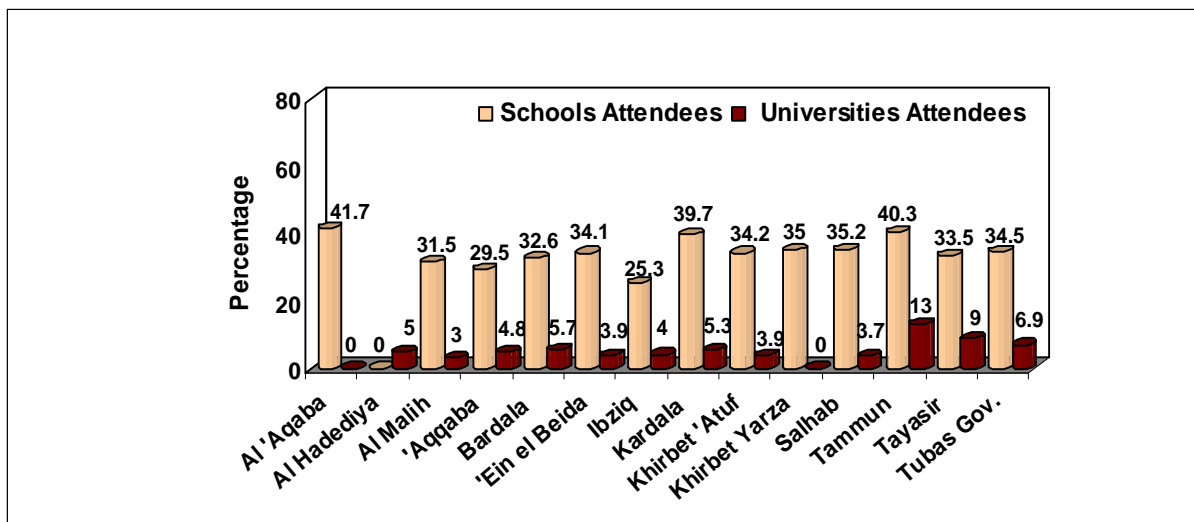


Figure 5.2.1: Percentage of family members that attend school and higher education institutions by locality in Tubas Governorate

### 5.3 Infrastructure and Accessibility to Public Services

Almost 81.7% of localities are served by a municipality or a village council. Up to 68% of surveyed families live in a house, which were mainly built of building blocks (63.7%) (figure 5.3.1). The houses were largely owned, since 79.1% of targeted families were home owners, followed by 10% of targeted families with rented houses. The average number of rooms per house was 2, where highest number of rooms was found in Tammun, Tayasir, Salhab, Bardala, and Al 'Aqaba reaching up to 3 rooms. It is worth noting that almost 88.1% of targeted households owned a cooker, followed by 75.2% owning a TV, 68% owning a refrigerator, and 67.3% owning a washing machine (figure 5.3.2). Only 4% and 12.9% of targeted households have a car and a computer mainly in Kardala village, respectively. It is worth noting that 58.6% of Tubas targeted households own a Satellite mainly in Kardala village (95%).

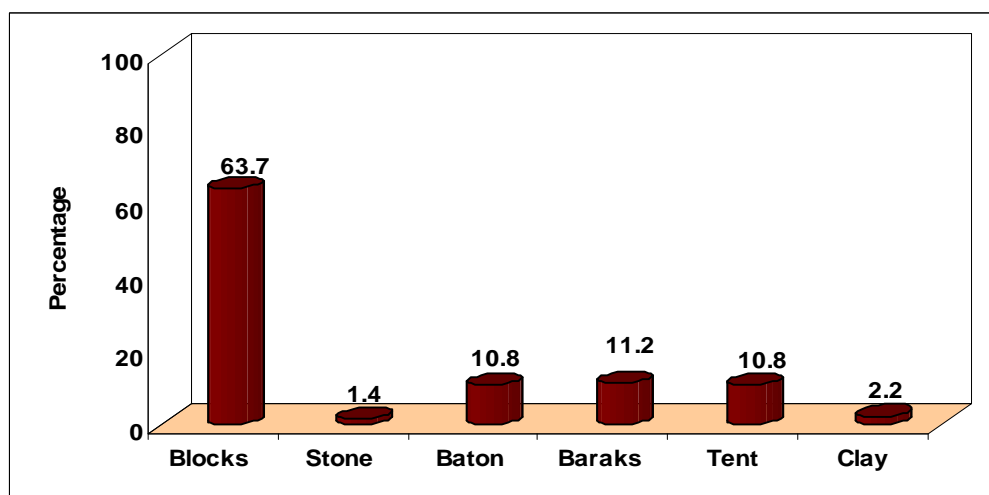


Figure 5.3.1: Type of houses that targeted households live in at Tubas Governorate level

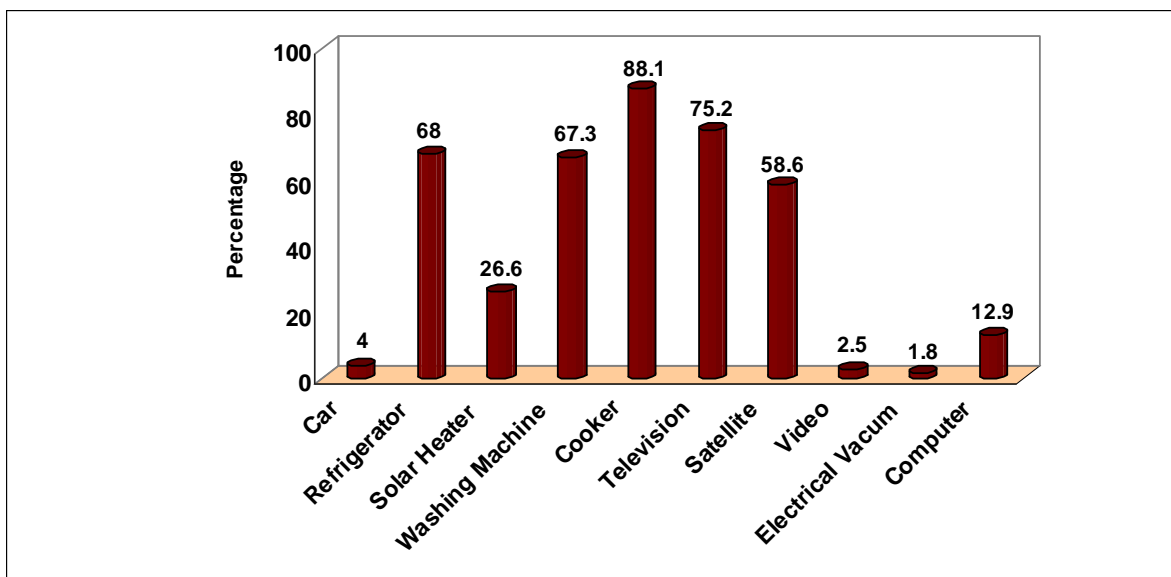


Figure 5.3.2: Percentage of household assets per type at Tubas Governorate level

Few (0.4%) of the targeted families were connected to a local public wastewater network but 75.5% of households get rid of their wastewater through cesspits. Concerning sources of drinking water, it was found that 40.6% of targeted households access water through purchasing water tanks mainly in Al Hadediya, Al Malih, Ibziq, Khirbet Yarza, and Salhab, which have no other source of drinking water, while 27.7% of targeted households are connected to local water network mainly in Kardala and 'Ein el Beida villages, which have no other source of drinking water, and 16.9% access water from water cisterns mainly in Tammun town (figure 5.3.3). On the other hand, 81.7% of targeted households were found connected to public electricity network; but 18.3% of households were found with no source of electricity mainly in Salhab, Khirbet Yarza, Ibziq, Al Malih, Al Hadediya villages. It is worth noting that the mentioned villages are the same villages that have no other source of drinking water than tanks, and accordingly they are not connected to any type of network.

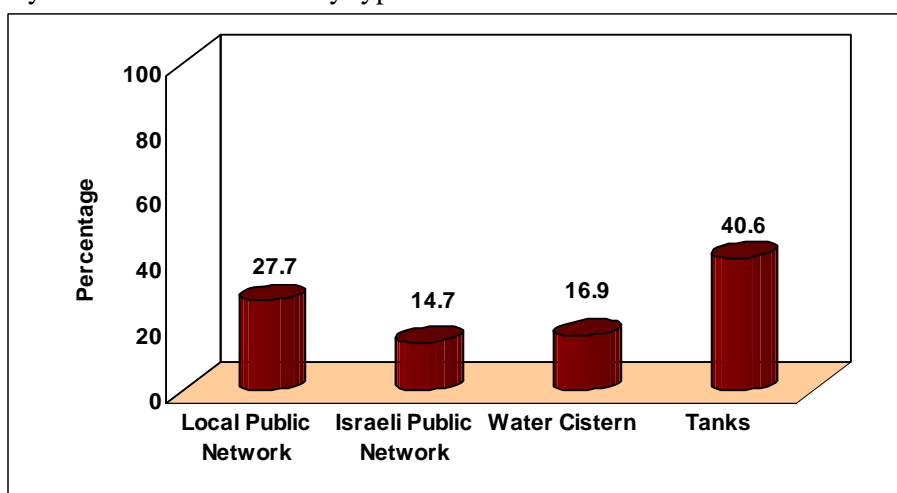


Figure 5.3.3: Percentage of households connected to drinking water sources at Tubas Governorate level

### 5.4 Agriculture Data

Out of the 278 surveyed households, it was found that 18% own agricultural lands (50 households), and 33.5% own livestock (93 households). Of those that own lands almost 84% households (42 households) plant their lands, where total cultivated area is 416 dunums. It seems that the agricultural lands in Tubas Governorate have not fragmented since each household have an average 10 dunums. The main type of cultivation adopted by surveyed households was vegetable forming 51.3% of total cultivated area, followed by field crops forming 31.2% of total cultivated area and green houses and fruits forming 11.3% and 6.2% of total cultivated area, respectively. All targeted households in 'Aqqaba, Bardala, 'Ein el Beida, Kardala, Khirbet Yarza, and Tayasir villages planted their lands (figure 5.4.1).

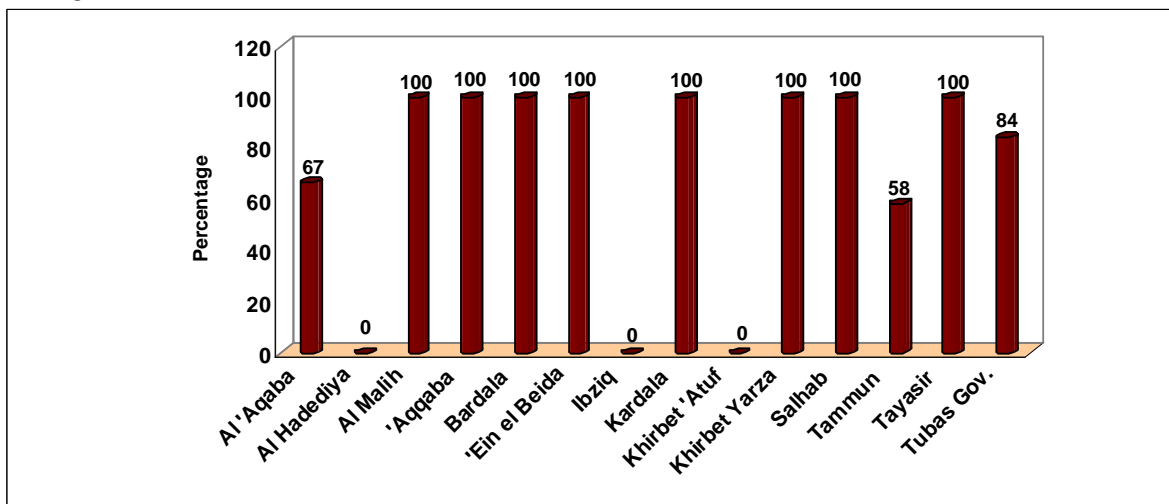


Figure 5.4.1: Percentage of surveyed households who planted their lands of total households who own lands in Tubas Governorate

The largest cultivated areas were found in Kardala, Bardala, and Salhab, where 195, 64 and 42 dunums were cultivated respectively (figure 5.4.2).

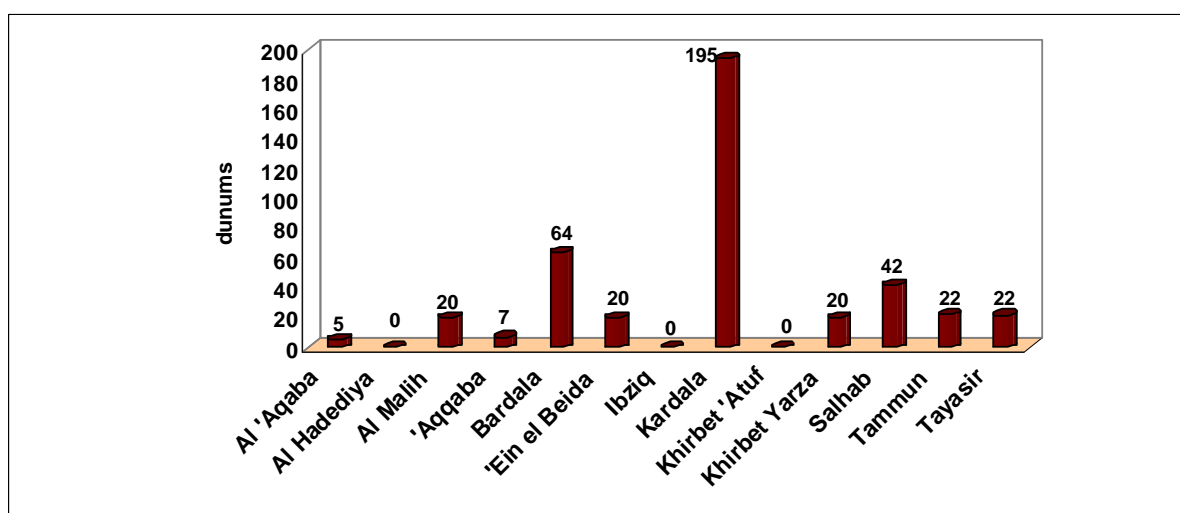


Figure 5.4.2: Cultivated area in dunums by surveyed locality in Tubas Governorate

Surveyed localities are cultivated with a variety of plantations, where vegetables and green houses were mainly cultivated in Bardala, 'Ein el Beida and Kardala, while field crops were cultivated mainly in Al 'Aqaba, Al Malih, Khirbet Yarza, Salhab, Tammuna and Tayasir villages, and 'Aqqaba village cultivate fruit trees only (figure 5.4.3).

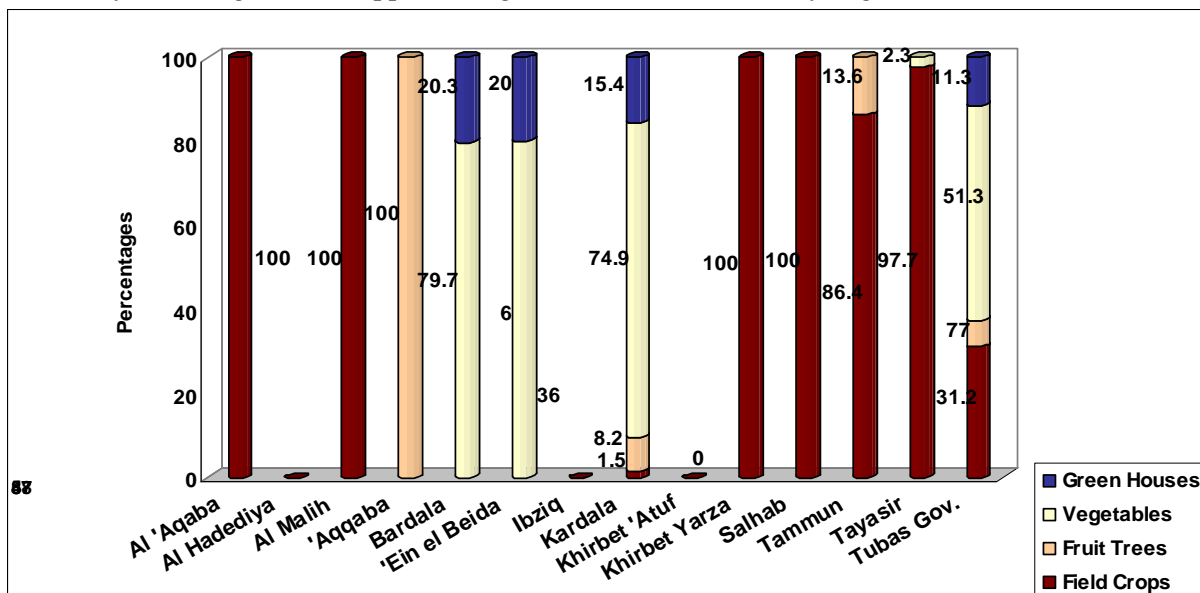


Figure 5.4.3: Percentage of cultivated area by type of cultivation by locality in Tubas Governorate

It was also found that the main source of water used for irrigation was rainfall water, where almost 52.6% of the surveyed households rely on rainfall for irrigation as rainfed cultivations, followed by 36.8% used local water network (figure 5.4.3).

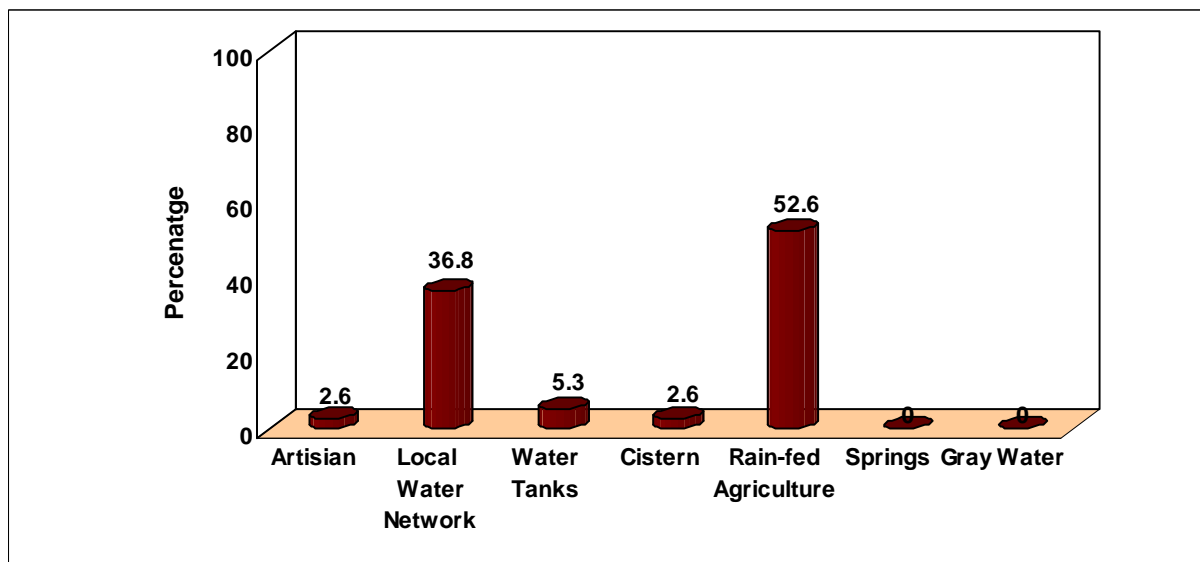


Figure 5.4.3: Percentage of surveyed households using different water sources for irrigation in Tubas Governorate

Out of the surveyed households that own livestock (33.5% of total surveyed households), sheep were the main type of livestock raised. The total number of raised sheep in Tubas

Governorate is 3482 heads, while the rest are 522 heads of goats, 97 of cattle, and 1452 heads of poultry (layers and broilers). Beehives were not found among the livestock raised in the targeted localities. Sheep were mainly raised in Ibziq and Al Malih villages. Goats were mainly raised in Al Malih and Khirbet 'Atuf villages, while cattle were mainly raised in Khirbet Yarza and Al Malih villages. Poultry were raised in Salhab village. The variable ecosystems where each surveyed locality is located played a major role in raising the appropriate type of livestock per locality; for example Al Malih, Ibziq and Khirbet 'Atuf are considered Bedouin communities concentrated in the central and eastern areas of Tubas Governorate and accordingly rely on raising livestock for a living.

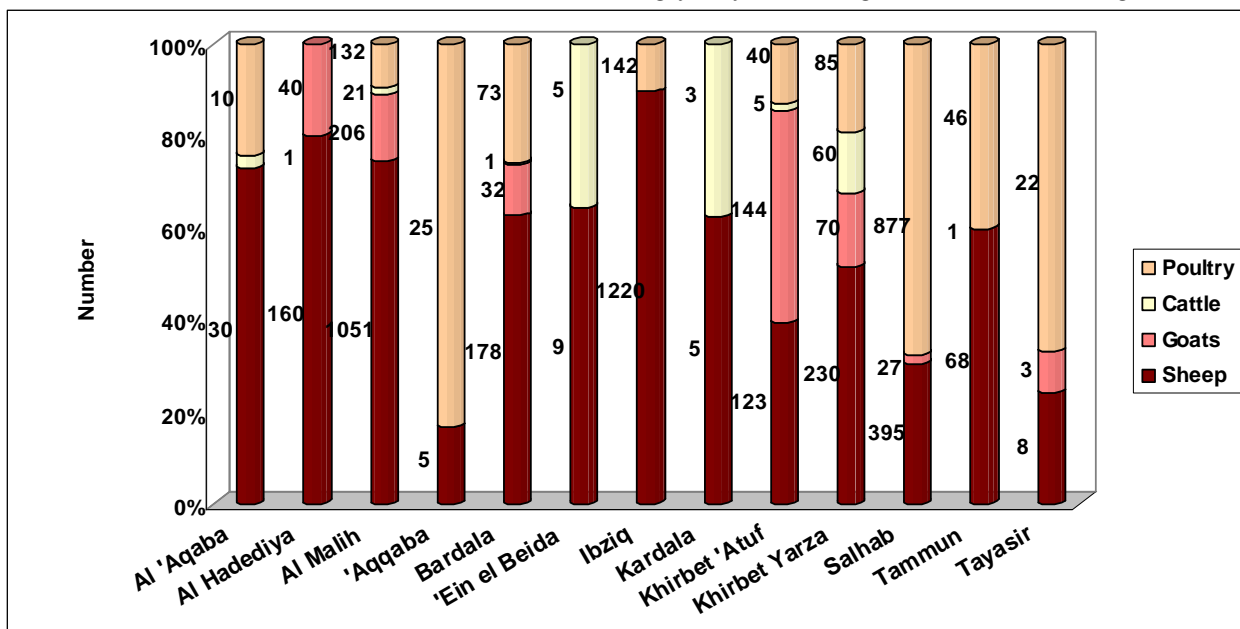


Figure 5.4.4: Number of livestock heads by type by locality in Tubas Governorate

### 5.5 Health Data

Disabilities and /or health difficulties were evident in the surveyed households, where 19.8% of the households reported having either a member with a disability or a difficulty or both. The total number of people disabled or/and having a difficulty is 77, which were mainly found among males reaching up to 70% of total number of cases. Khirbet Yarza, Salhab and Tammun localities had the highest number of households with disabilities and / or difficulty (figure 5.5.1). Concerning number of case it was the highest in Tammun (with 29 cases) and Tayasir (with 17 cases) villages.

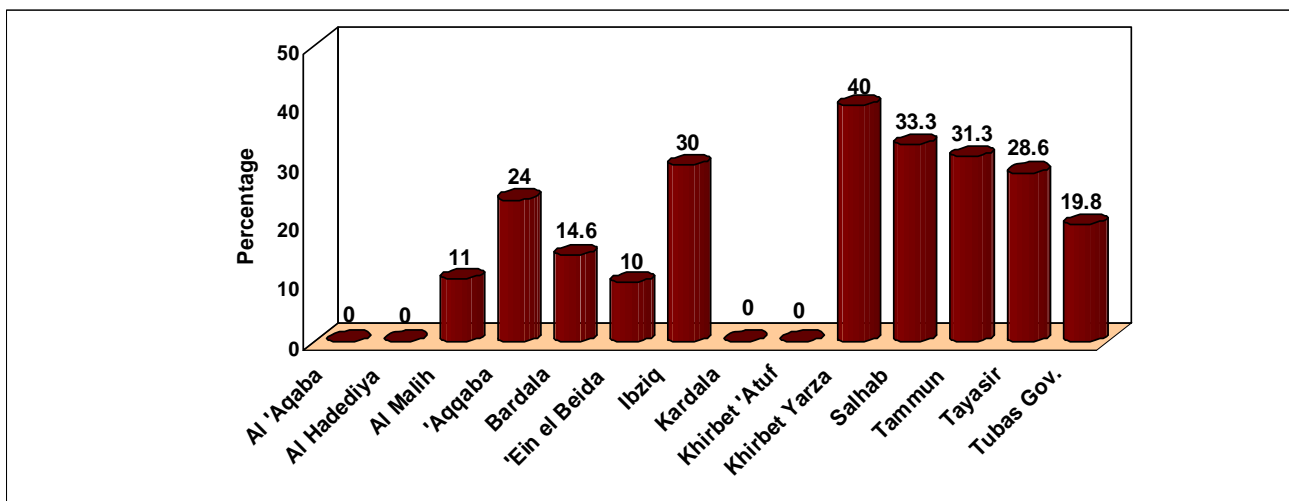


Figure 5.5.1: Percentage of surveyed households with disabilities and / or difficulty by locality in Tubas Governorate

Households with members suffering from diseases reach up to 47.8% of total surveyed households (170 person), where male and female cases were equally distributed among surveyed family members suffering from diseases. The highest percentage of households with disease was found in Tammun, Bardala and 'Ein el Beida localities (figure 5.5.2). Several reasons could explain such a status, yet the most obvious are vulnerability, poverty and lack of health awareness.

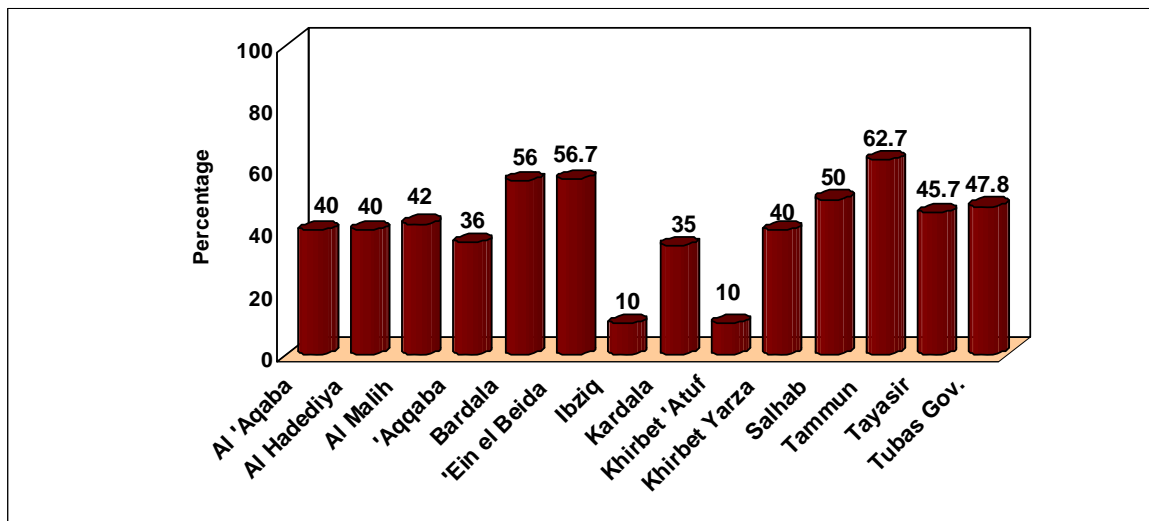


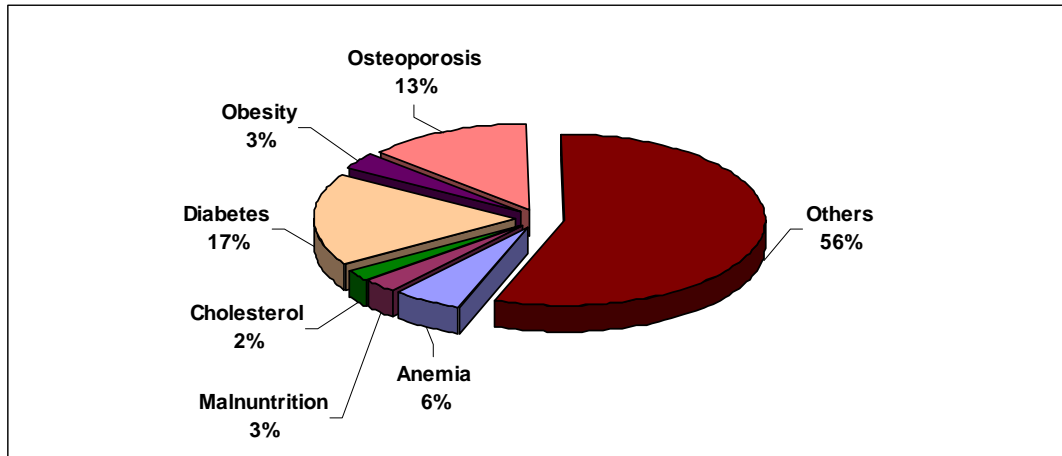
Figure 5.5.2: Percentage of households with diseases by locality in Tubas Governorate

The impact of the deteriorating economic status on health status is evident in this example, since those targeted households are considered the poorest at the locality and governorate level. Most of the surveyed households suffer from different types of diseases that could be affected directly by malnutrition. For example diabetes was one of the highly exposed diseases in the governorate where more than 17.4% of the family members suffer from it which relates directly to nutrition and bad health practices (figure 5.5.3).<sup>19</sup> It is worth noting that during the blood survey that was conducted in parallel

<sup>19</sup> FSIS-Blood Surveillance Report indicating related results



with the baseline survey in Tubas Governorate, most of the beneficiaries confirmed that they had never done a blood test analysis which also indicates that most of them do not know what kind of diseases they have or are susceptible to; especially vitamin B12 and ferritin deficiency, which require longer periods of time to produce clear symptoms. Almost 65.5% of the surveyed households' own health insurance which were equally distributed among males and females. Tammun town (94%) and Tayasir village (77%) have the highest percentage of households with health insurance.



*Figure 5.5.3: Percentage of family members with different types of disease in Tubas Governorate*

In addition to the mentioned diseases in figure 5.5.3, other diseases were found in Tubas Governorate including high blood pressure, cartilage, heart, eye, kidney diseases and degenerative disc disease.

### **5.6 Economic Data**

Investigating the economical status of the targeted households, it appears that the surveyed communities are suffering from low incomes especially that their total income is less than their average expenditures per month; (figure 5.6.1). At Tubas Governorate level the average income of the surveyed households was 1137 NIS per month, which is considered under the deep poverty line in comparison to PCBS poverty line standards 2009, which reaches 1870 NIS per month<sup>20</sup>. The recorded average income per household is considered very low when compared to the deep poverty measured income by PCBS 2009, where such a gap highlights the causes behind the deteriorated livelihood of selected communities and justifies the importance of such selection reflecting a new scene for the poor communities, where poverty appears deep and widespread.

The average expenses at governorate level, on the other hand, appear higher than average income reaching up to 1417 NIS per month, which also reveals a shortage in income to cover the needs at the household level. It is worth noting that the expenses were measured in the survey as basic needs which include food, educating, health, communications, transportation, and bills.

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<sup>20</sup> Palestinian Central Bureau of Statistics, 2010. *Main Features of Poverty in the oPt 2004-2009 according to the new methodology to measure poverty averages for year 2010 (New poverty level measuring methodology)*

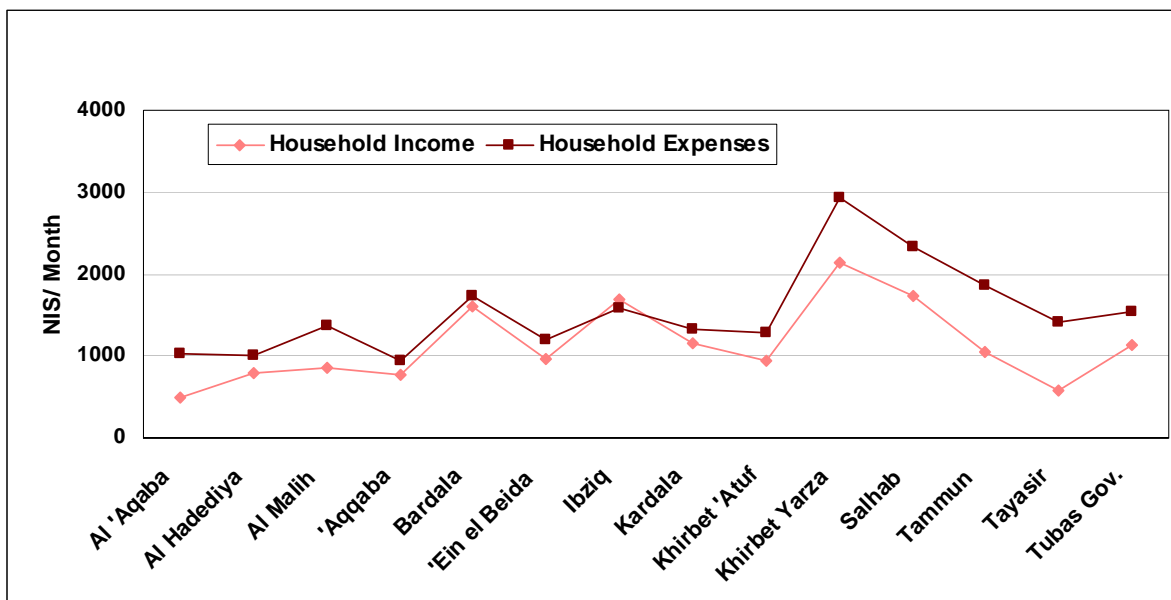
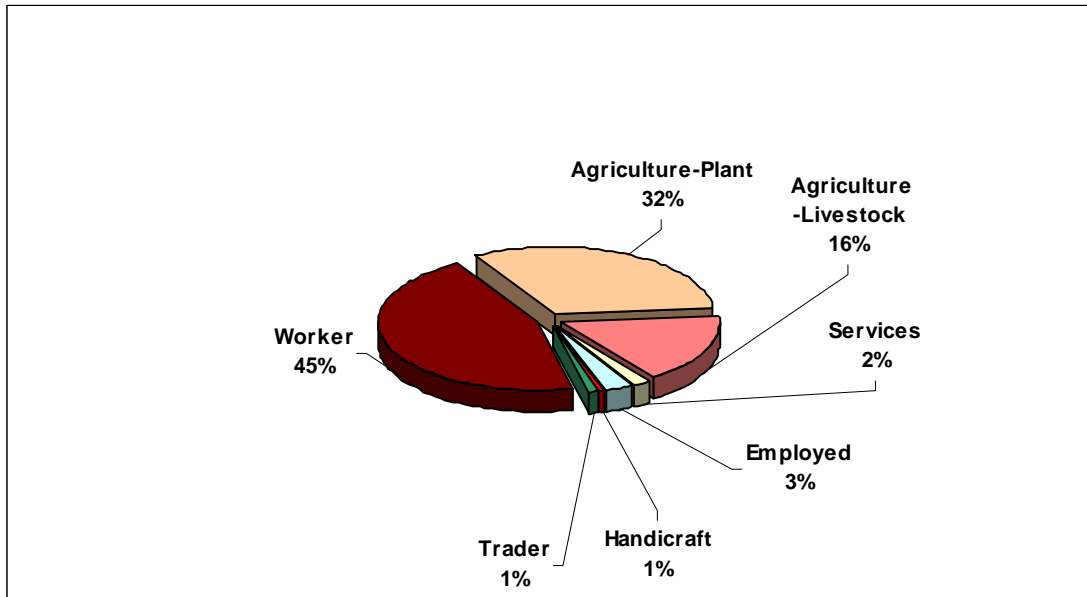


Figure 5.6.1: Household income in comparison with household expenses by locality in Tubas Governorate

All targeted localities suffer from an income shortage to cover their basic needs expenses, where the gap between their expenses and their average income per month became a phenomenon that Palestinian households face every month; causing the households to reduce their quality of life and to adopt coping strategies that affect all life aspects including their health status. As appears in figure 5.6.1, the shortage in income to cover the households' basic needs at governorate level reached an average of more than 400 NIS/month, where Tayasir, Tammun and Salhab villages suffer mostly and the shortage reached up to an average of 831 NIS/month, 819 NIS/month, and 607 NIS/month, respectively. The income among the targeted localities was the lowest in Al 'Aqaba and Tayasir villages, which reached an average of only 500 and 586 NIS/month respectively, while expenditures were the highest in Khirbet Yarza, Salhab, and Tammun localities, which reached an average up to 2923, 2340, and 1870 NIS/month respectively. Ibziq village was the only village where the households' average income covered the households' average expenses.

The findings reveal that only 295 persons of family members are economically active, forming 16.2% of total surveyed family members, of which 8% are working part time and 4.2% are females. Khirbet Yarza, Al Hadediya and Bardala had the highest percentages of households with economically active members, reaching up to 40%, 24%, and 21.4% respectively.

Household heads in labor could be husband, wives, sons or others. The husband in labor formed 66.3% of the total households in labor, wives in labor formed only 12.2% and sons formed 21.1%. The wives and husbands work mainly in agriculture, while sons work mainly as workers. It was also found that working in agriculture is the dominant type of work at governorate level, reaching up to 47.5% of households, followed by working as workers, reaching up to 44.5%, followed by employment, reaching up to 3% (figure 5.6.2).

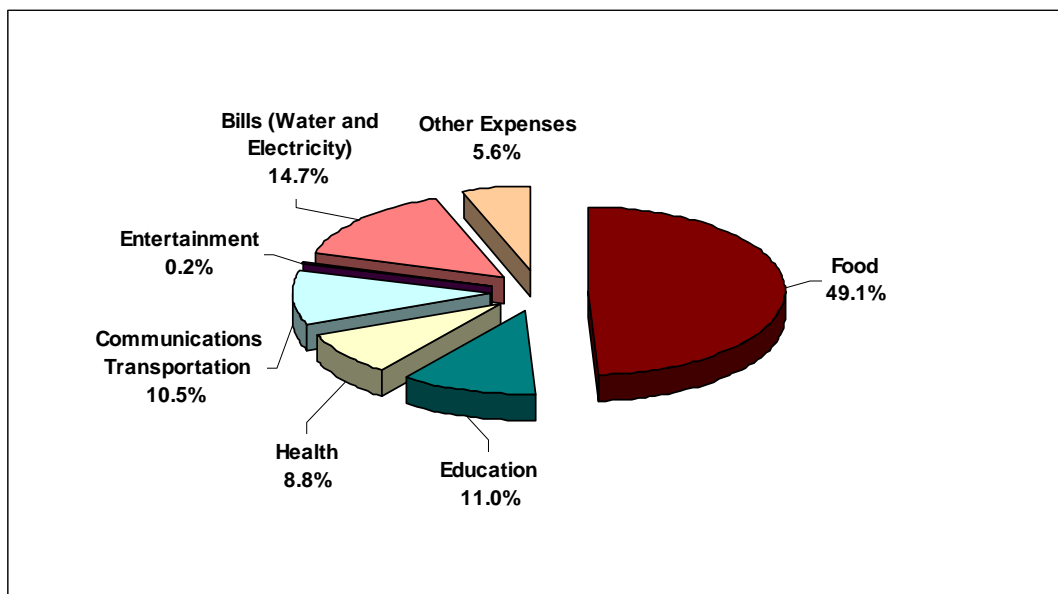


*Figure 5.6.2: Type of work at household level in Tubas Governorate*

It appears from the findings that more than 83.8% of the surveyed household members are considered economically dependent; causing great pressure on the family level and driving it towards deep poverty. Such situation worsens when income is not enough to cover the families' basic needs and when family members suffer from disabilities and diseases, where extra expenses for health care are needed.

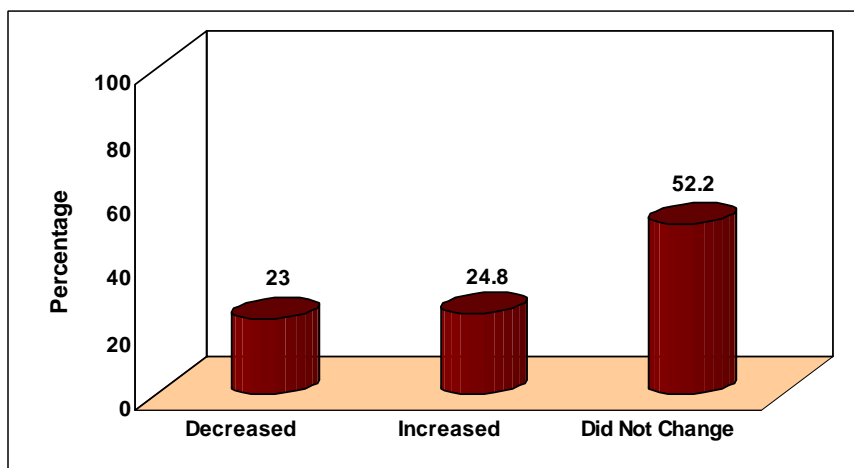
### **5.7 Food Security Data**

Investigating in depth the type of expenses at household level, it appears that 49.1% of family expenses go to food, followed by 14.7% for bills, and 11% for education. Health care takes only 8.8% of the total household expenses. Comparing the results with World Food Program numbers concerning the households expenditures as a result of the SEFsec (FAO/WFP Socio-economic and Food Security Survey in the West Bank) report in the year 2009 that covered households (in a random sample) in the West Bank, it appears that the surveyed targeted households are living in similar conditions as the rest of the governorate households since the percentage of expenditures that goes to food according to SEFsec survey is 42% in the West Bank, and 58% at Tubas Governorate level (figure 5.7.1).



*Figure 5.7.1: Percentage of households' expenditures in Tubas Governorate*

Almost 23% of the households reduced their family expenditures during the last six months of the survey period (figure 5.7.2), out of which 96.9% of the households reduced their expenditures on food, followed by clothes, transportation, and health, where 92%, 66%, and 53% of households reduced their expenditures, respectively (figure 5.7.3). The reduction on food goes mainly on the reduction on quantity of meat, where 95.2% of surveyed households reduced their meat intake during the last six months of the survey time, followed by 93.5%, 79%, 75.8% and 50% households reduced their quality of food, quantity of food, vegetables and fruit intake, and milk respectively.



*Figure 5.7.2: Percentage of households that made changes on their expenditures during the last six months of the survey period in Tubas Governorate*

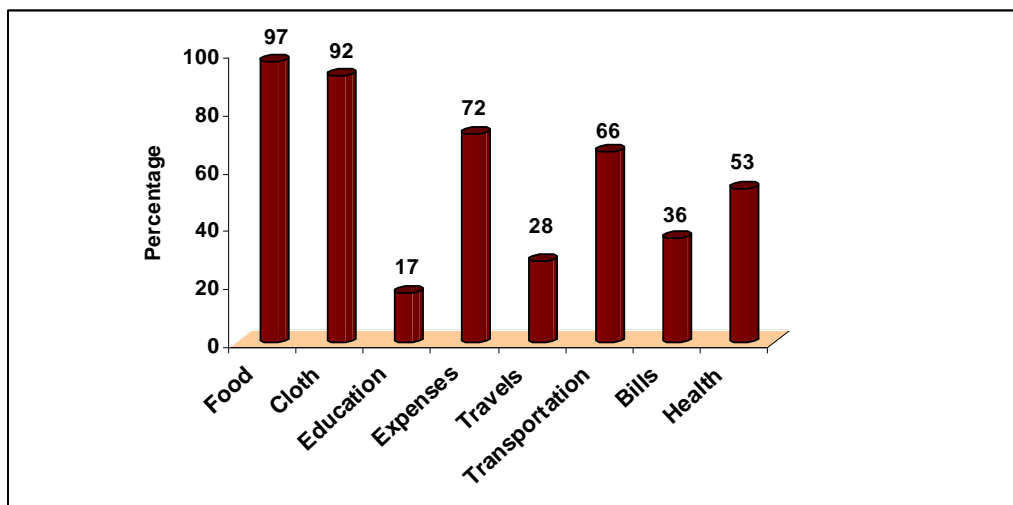


Figure 5.7.3: Percentage of households that reduced their expenditures by type of sector in Tubas Governorate

Kardala, Tayasir, and Al 'Aqaba villages showed the highest percentage of reduction in expenditures at households' level (figure 5.7.4). This emphasizes that the majority of the targeted households resort to changes in their food consumption patterns (quantities and qualities) in order to decrease food expenditures so as to cope with their income averages to meet their basic needs. In some cases, when the reduction in the amount of food is no longer possible, only quality could be further decreased. Such strategies can have a direct impact on lives and livelihoods, through poorer health and nutritional status, excessive indebtedness and loss of future opportunities for higher skills and better paid jobs.

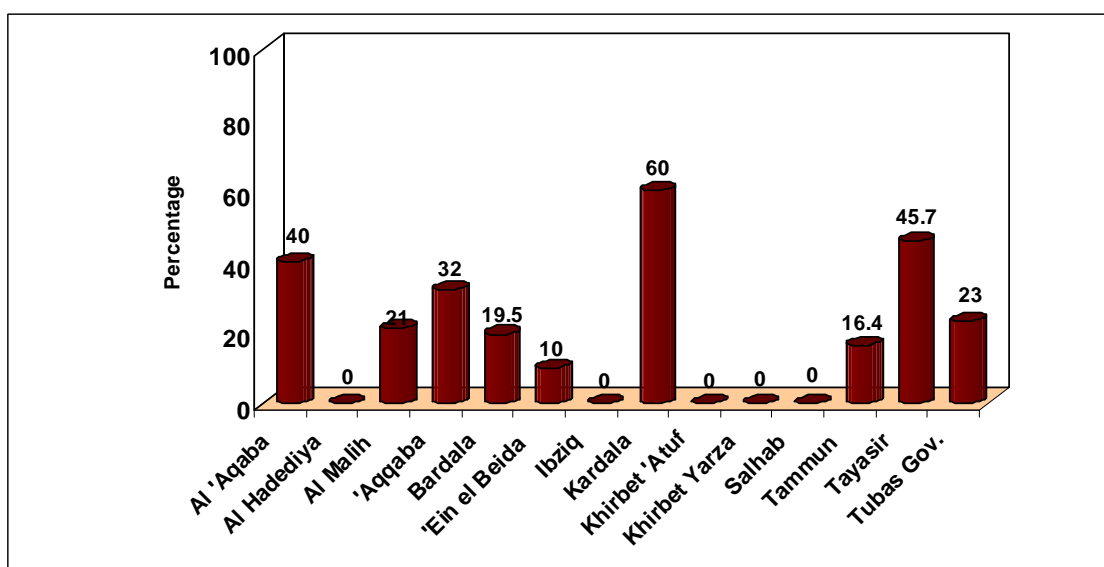
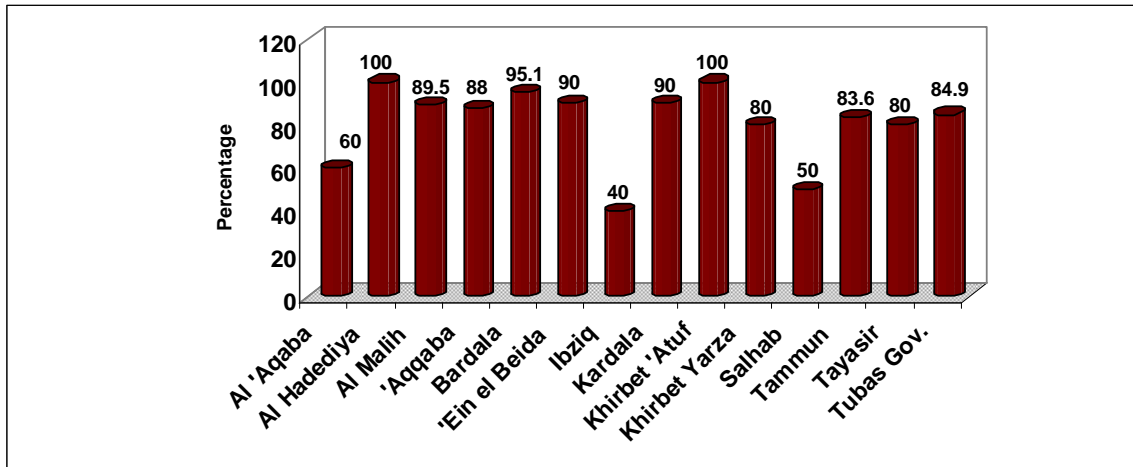


Figure 5.7.4: Percentage of households that reduced their expenditures during the last six months of the survey period by locality in Tubas Governorate

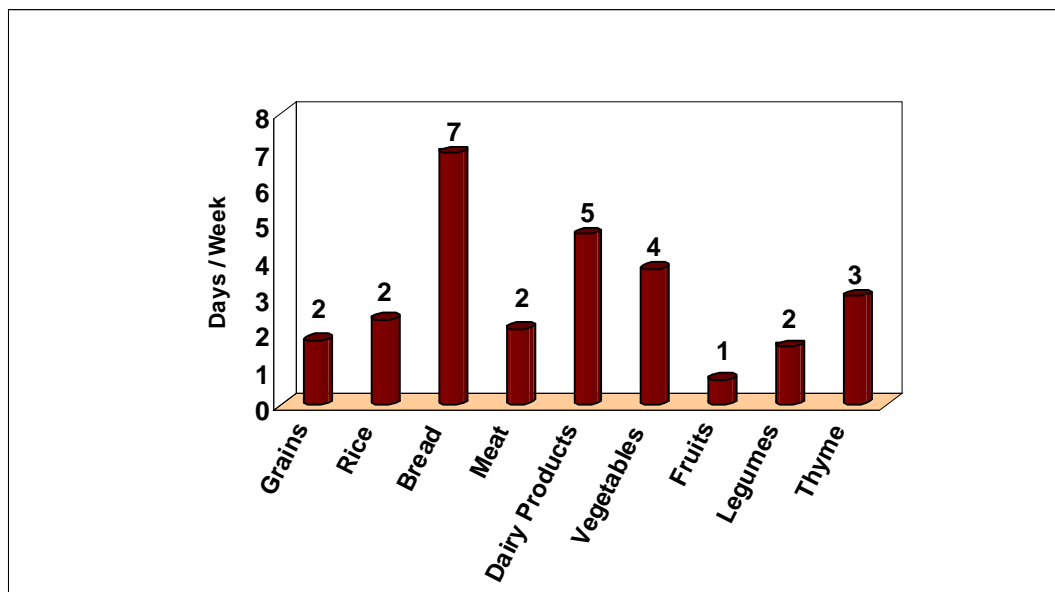
More than 84.9% of the surveyed households purchase their food on credit forming 42% of their food purchases. Households of Khirbet A'tuf and Al Hadediya villages had the highest percentage of food purchases on credit (figure 5.7.5).



*Figure 5.7.5: Percentage of households purchase food on credit by locality in Tubas Governorate*

Looking in depth on the weekly consumption of food to further assess the food security issue at household level, the survey reveals the main food staples consumed weekly by the surveyed households are bread and dairy products, while meat, grains, rice, and legumes were consumed only twice a week and fruits once per week (figure 5.7.6). Such results were emphasized when more than 87.8% of the households confirmed their worries of not having enough food in the last month (of the survey time), 83.5% of households confirmed eating not preferable food in the last month (of the survey time), 62.6% confirmed eating less meal per day as a results of not having enough food during the last month (of survey time), 11.5% of households confirmed sleeping at night without food as a result of not having enough food during the last month (of survey time). Such cases indicate the continuous degradation of the food security situation particularly in the targeted community section, which can be attributed to a significant extent to the ineffectiveness of the targeted households coping mechanisms. Food intake and practices are directly affected by the reduction of food expenditures especially on quality, highlighting carbohydrates intakes rather than proteins and vitamins as a coping strategy to reduce food expenses causing serious deterioration in the health and nutritional status of the family.





*Figure 5.7.6: Weekly consumption of food by type of food consumed in Tubas Governorate*

Correlating the weekly consumption of food and the food consumption score, the survey reveals that food consumption of surveyed households is considered borderline to poor. The food consumption score estimates the amount and variety of food consumed in the households during the 7 days preceding the survey, by counting the number of times specific food items (grouped in specific food groups) are consumed.

**A ‘poor’ food consumption** consists of basic staple food (i.e. cereals, sugar and oil) consumed on a near daily basis, vegetables 4 times during the 7 days prior to the survey and very rare consumption of animal products and fruits. Quantities are also likely to be low or below kilocalorie requirements for household members with additional needs (pregnant and lactating women, physically active adults). This is the case for most surveyed households, where 65.4% of localities are classified as poor consumers since they eat meat, dairy products, and fruits less than twice a week and vegetables less than 4 times a week, which also emphasize the adopted coping strategy of reducing expenditure on food quality and quantity. It is worth noting that the diet of the targeted community is lacking of enough daily intake of staple foods, and in most cases they consume grains, rice and legumes only twice per week.

Poor consumption comes as a response to deep poverty conditions that affect the surveyed households, as a result to high household size (reaching in most localities up to 6), high economically dependents (reaching up to 83.8% of surveyed family members), low average household income (reached up to only 1137 NIS /month) and inability to cover basic food needs. The highest household income that was recorded during the survey only reached 2,140 NIS/ month in Khirbet Yarza village, which is still under poverty levels (2,278 NIS/ month<sup>21</sup>). All studied indicators reflected poor living conditions including low incomes, poor food consumption, poor health and nutrition

<sup>21</sup> Palestinian Central Bureau of Statistics (PCBS). Poverty in the oPt. 2010. Ramallah, Palestine.

status, poor resources and resource mobilization, poor housing conditions, poor clothing etc.

Only 34.6% of surveyed localities showed a 'borderline' diet, which is similar but includes a slightly more frequent consumption of vegetables (5 times during the 7-day period), meat and eggs (3 to 4 times) and fruits (twice); quantities are probably just sufficient to meet kilocalorie requirements. The main localities are Salhab, Khirbet Yarza, Kardala, and Ibziq villages, which showed a lower gap between income and expenses than other localities except to Khirbet Yarza (figure 5.6.1). Up to 100% of households cultivated their lands except Ibziq village (figure 5.4.1) and almost 93.4% of the surveyed households in mentioned villages work in agriculture.

The results are highlighted when comparing the FSIS baseline survey results with the SEFsec report results, which reveal that about 32.8% of households in Tubas governorate are food insecure in comparison to 25% in the greater West Bank. It is worth noting that the FSIS targeted household section -poorest of the poor- should be considered as food insecure households since they suffer worse situation. For example, the percentage of households that reduced their expenditure on food is higher in the FSIS targeted households by at least 43.7% than SEFsec targeted households, where percent of households reduced their expenditure on food in Tubas Governorate reach up to 53.3% in comparison to 97% in the FSIS targeted localities in Tubas Governorate. 43.7% and 47.8% of SEFsec surveyed households reduced expenditures on quality and quantity of food in comparison to 93.5% and 79% of FSIS surveyed households respectively in Tubas Governorate. Purchasing Food on credit is practiced by 51.7% of SEFsec survey households, while almost 84.9% of FSIS households and other indicators revealed declining situation of the selected section by FSIS project suggesting new vision of plans targeting such section of communities with main focus on small scale agro-developmental activities on either community or household level.

Despite the deteriorating conditions of the targeted households; only 65.1% of targeted households received assistance during the last 6 months of the survey time, while more than 33.5% households are in need for assistance and did not receive any (figure 5.7.7). Al 'Aqaba, and Al Hadediya villages had the highest number of households, which received assistance reaching up to 100% of surveyed households, respectively (figure 5.7.8). The lowest number of households, which received assistance, were in Kirbet Yarza and Ibziq villages, where 0% of the households received assistance. It is worth noting that Kirbet Yarza and Ibziq villages had the largest number of households, who confirmed their need for assistance, where 100% and 80% of the households did not receive assistance and need it, respectively.

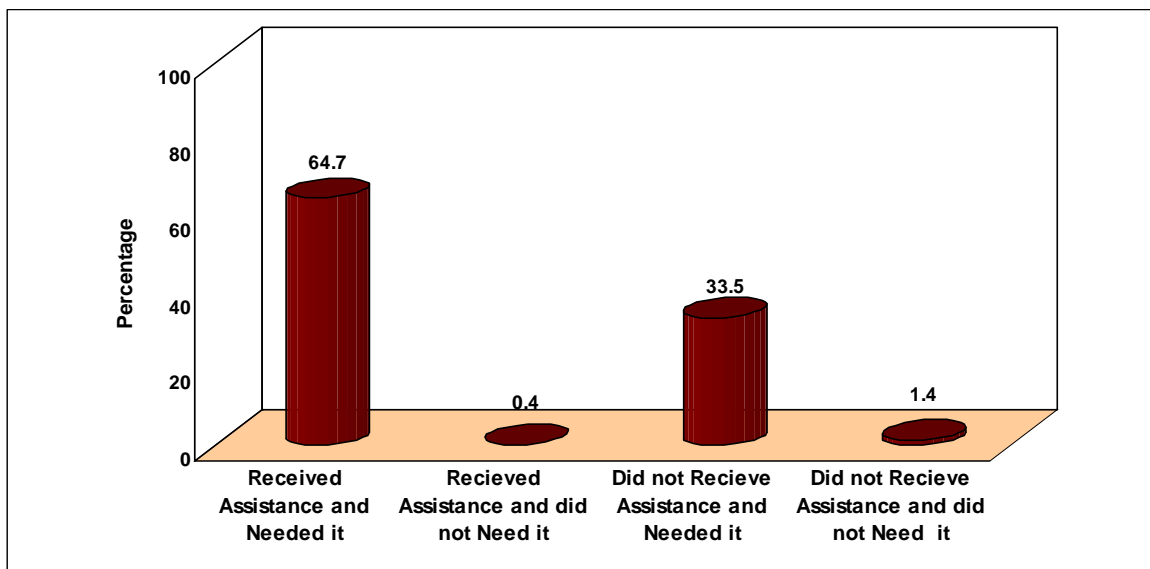


Figure 5.7.7: Percentage of households received and did not receive assistance in Tubas Governorate

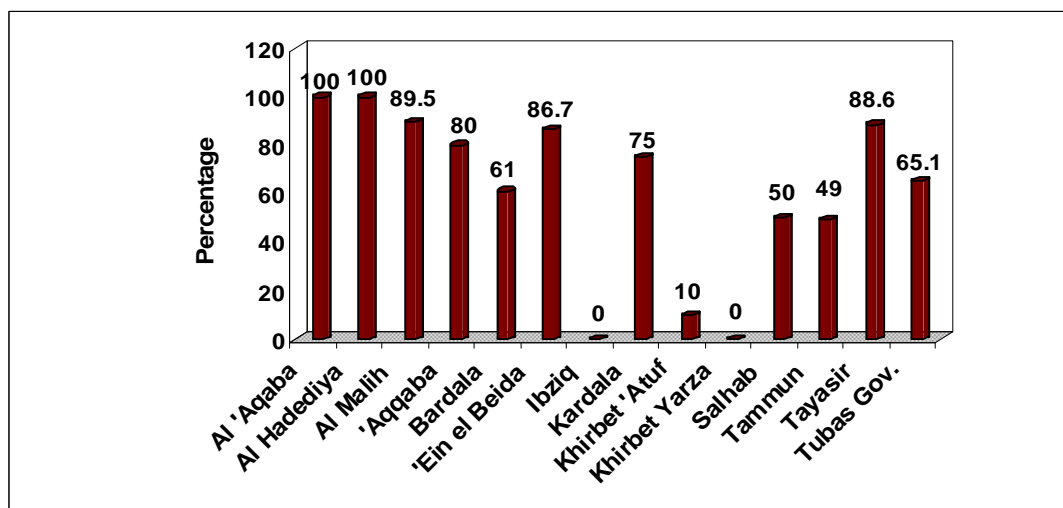
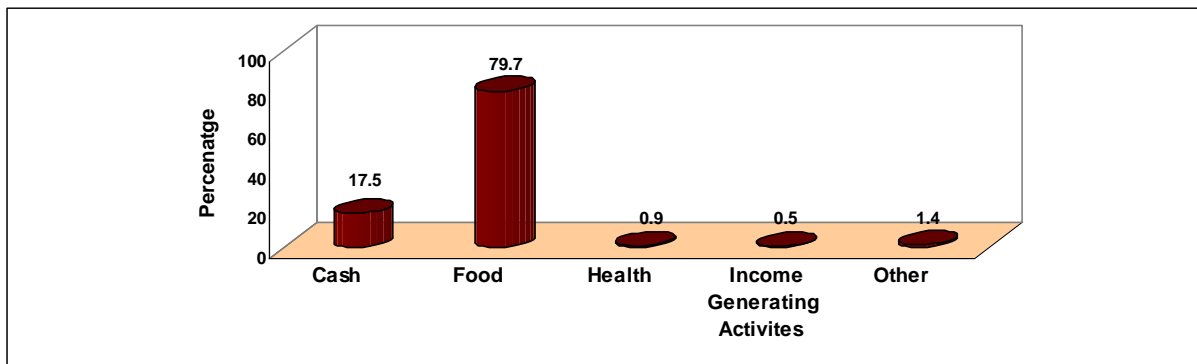


Figure 5.7.7: Percentage of households received assistance by locality in Tubas Governorate.

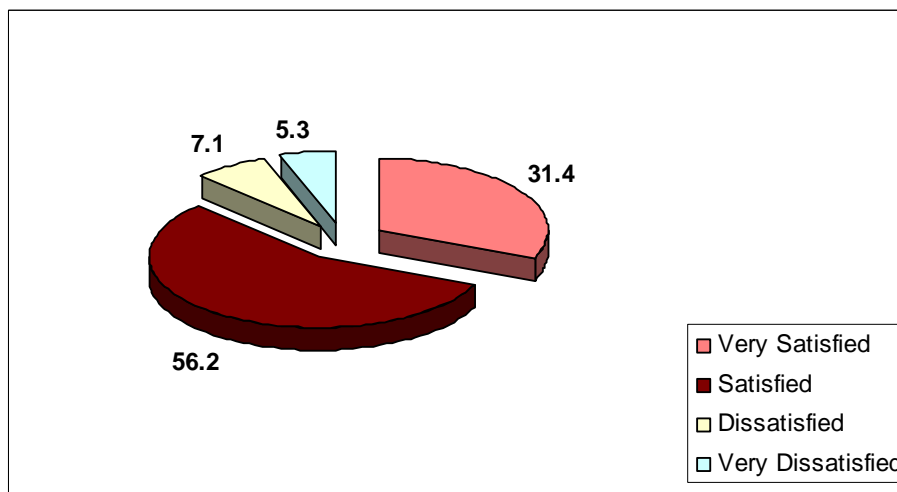
The main type of assistance received in the targeted areas of Tubas Governorate was food assistance reaching up to 79.9% of households who received assistance (figure 5.7.9), followed by cash assistance. Al 'Aqaba, AL Malih, 'Aqqaba, and Kardala villages had the highest percentage of households who received food assistance. The main food types distributed over the targeted households are wheat, sugar, oil, chickpeas, and salt, where more than 70% of the assisted households received the mentioned types of food. Generally, assistance including clothes, furniture, job and education assistance were not received by any of the targeted households and health assistance reach only 0.9% of targeted households. This highlights the importance for the need of better distribution of types of assistance to those in need in relation to household needs.



*Figure 5.7.9: Percentage of households received assistance by type of assistance in Tubas Governorate*

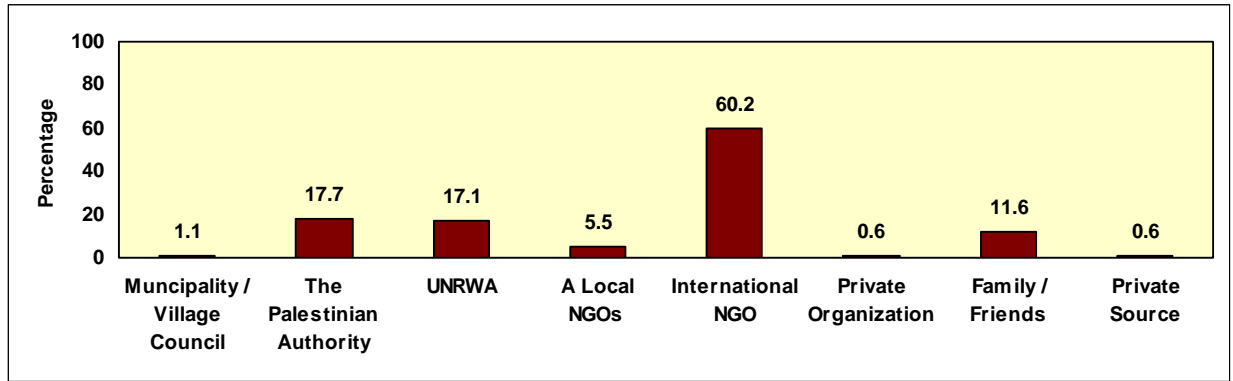
According to the SEFsec survey only 35.3% of surveyed households in Tubas Governorate received assistance in the year 2009, and food assistance reached up to 20.9% of total assistance.

Concerning the satisfaction levels on all types of received assistance, almost 87.6% of the households were satisfied or very satisfied. Also almost 93.8% of the assisted households confirmed their satisfaction on food and health aid respectively (figure 5.7.10).



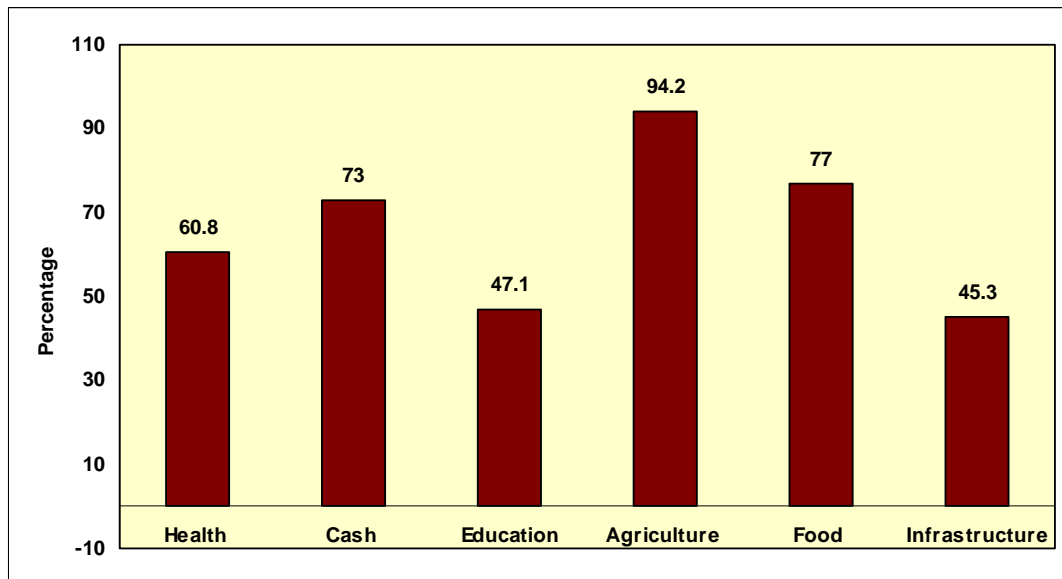
*Figure 5.7.10: Level of satisfaction concerning food assistance received in Tubas Governorate*

It was also found that the international NGOs are the main source of assistance for the targeted households, where more than 60.2% of households receive assistance from international NGOs such as WFP, UNICEF, FAO and others, followed by 17.7% of the households receiving assistance from the Palestinian Authority (figure 5.7.11).



*Figure 5.7.11: Source of household assistance in Tubas Governorate*

All surveyed households confirmed their absolute need for assistance, where agriculture and food assistance were the two main types of assistance requested by the surveyed households, followed by cash and health assistance as indicated in figure 5.7.12.



*Figure 5.7.12: Type of assistance in need as requested by surveyed households in Tubas Governorate*

Food assistance was requested by all targeted communities mainly by Ibziq, Khirbet 'Atuf, Khirbet Yarza, and Salhab communities (figure 5.7.13).

Concerning the distribution of assistance to targeted households, it was assessed that only 22.3% of surveyed households confirmed that assistance reached those in need, while 24.1% households confirmed that assistance reach those not in need. This is another issue that needs addressing and further analysis.

In conclusion, the targeted section of households that are considered the poorest of the poor at the governorate level, are unable to secure sufficient income to meet their essential food and non-food requirements due to the lack of income –earning opportunities relying on Israel in labor force, a high dependency ratio, high number of

disabilities and diseases at the family level. This survey underscored the importance of specialized assessment studies to expose status and challenges of the most vulnerable areas and communities needing assistance. It also provided evidence that better planning is needed to alleviate those with the poorest livelihood conditions and focus on health, nutrition and food security issues.