



### **Making Use of House and Agricultural Waste in Beni Suif Governorate**

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#### **Introduction:**

Agricultural waste, both animal and plant, is considered secondary product within the overall agricultural production system. The benefits of this waste material should be maximized in order to transform it into natural and artificial fertilizers, non conventional animal fodder, food for human beings or source of energy. This would also contribute to a clean agricultural setting, protect the environment from pollution, improve the economic and environmental situation and raise the health and social level in the rural areas.

Garbage and house waste in the rural areas is often dumped in lakes and canals or on the streets. Naturally, they become a natural refuge for insects and stray animals. They also become important means of disease transmission. Several studies have pointed out that the waste resulting from paper, tissues, metal, glass and plastic can be re-cycled through different technological methods, ensuring maximum proper use for these resources.

Women constitute half the society. They have an extremely influential role in the development and welfare of their communities and in protecting them from pollution. Rural women, in particular can play an important role in maximizing benefits from house, animal and plant organic waste because of their direct responsibilities in looking after their families, and organizing their lives, as well as their daily interaction with secondary products and their role in promoting and rationalizing family behavior in dealing with waste, maximizing the use of available resources, raising the standard of living, and protecting the environment against pollution. Thus, the current research problem deals with the following question: In what ways do rural women use agricultural waste (plant and animal) as well as house waste, and whether or not they transform them into economically viable products that increase the income of the family.

#### **Objectives of the Study:**

##### **First: Research goals:**

1. Identify some of the demographic, social, economic and personal characteristics of the rural women respondents
2. Determine the level of rural women's knowledge of how to make use of house and agricultural waste
3. Determine the practices of rural women with regard to use of agricultural and house waste.
4. Determine the attitude of rural women towards making use of house waste
5. Identify the current types of house and agricultural waste available to rural women
6. Determine the importance of the different sources of information available to rural women in the study site on how to collect and make use of waste.

**Second: Applied goals:**

1. Train coordinators and employees of the “Young Investor” (*Al Mostathmer al Saghir*) association to collect data
2. Train coordinators and employees of the Young Investor association to organize and manage awareness raising meetings based on focus group discussions
3. Organize awareness raising meetings according to the actual training needs of rural women and their characteristics prior to generalizing it to other beneficiaries.

**Methodology:**

The study was undertaken in cooperation with the “Young Investor” association, a local association concerned with the development of local communities and family welfare in Bani Suif, the ultimate beneficiary of the study. A sample was drawn from five villages in Bani Suif, affiliated to two different administrative *Markaz*. All females in the five villages above the age of 16 were included in the sample, amounting to a total of 200 women. The sample was distributed as follows: 42 respondents from Bani Adiy or (21%); 33 respondents from Al Zaytoun or (16.5%); 42 women from Ashmant or (21%); 42 from Riad Pasha village or (21%) and finally 41 respondents from Al Sheikh Bahloul village or (20.5%). Age group representation as well as education, employment, marital status, type of family and land occupancy was taken into account. A questionnaire was administered. Simple statistical description was used in the analysis which included tables and frequencies, percentages and averages.

**Findings:**

The study reached the following important findings:

1. The age of respondents ranged between 17 and 80 years at an average of 42.46. The majority of respondents (79%) were housewives; 80.5% were illiterate. Respondents who had 3-7 years of education accounted for 11.5% and married respondents 88.5%. The 18-33 year duration of marriage accounted for 58.5%
2. Most of the families (81%) include individuals who work in agriculture; 51.5% of the total sample does not include children less than school age, while 48.5% of the families include one to more than three individuals in different stages of education; 88% of the total number of respondents' families are illiterate and 89.5% include individuals who have education qualifications.
3. Findings pointed out that 94.5% of the families own animals and 98.5% have poultry.
4. The level of respondents' participation in social functions, such as exchange of visits with other villagers, accounted for 98% while 65.5% are moderately or highly open to the outside world.
5. The highest percentage of participation in activities is in baking (99%) while the lowest participation is in knitting (1%), leather works (0.05%). Among the agricultural activities, respondents participate in storing products (94.95%), followed by the preparation of seeds 86.86%. With regard to participation in animal production activities, the highest participation was in marketing milk and dairy products (99.47%), followed by preparing a place for the animals (98.41%); the lowest level of participation was in purchasing animals (24.87%). Women's participation in poultry production was also high.
6. Around half the respondents i.e. 56% have little information about how to make use of house and agricultural waste; 69% had medium or high level of information.
7. With regard to average level of information on how to make use of agricultural and house waste, findings pointed to difference in responses according to age, number of family members, participation in unofficial social occasions, occupancy of agricultural land, and participation in animal production. Respondents with more education had more average scores. The same was also true for respondents with family members working in agriculture who have academic qualifications, and respondents who obtain their information from local sources such as neighbors, family and relatives. There was no difference in responses when it came to marriage duration and participation in agricultural production.
8. Findings indicated that 75.5% of the respondents tend towards making good use of agricultural and house waste. There were no differences in responses according to age, engagement in agricultural activities or unofficial social participation, but there were differences in the average scores according to education, duration of marriage, level of education, land occupancy and participation in animal production.
9. Findings demonstrated that the main source of information for rural women is relatives (82.5%), followed by neighbors (78.5%), husbands (75%), newspapers and magazines (4%).
10. Findings pointed out that the most prevalent agricultural waste is corn waste (98.48%). It is used as animal

fodder by 10.77% or as fuel by 92.82% of the total number of respondents; the least prevalent is rice straw (16.67%). It is used as animal fodder or spread under the animals and poultry by 75.76%, used as fuel by 51.51% or burned by 36.36%.

11. Findings pointed out that the majority of respondents have numerous forms of house waste and different practices for each for example, 94.95% use *radda or bran* as animal fodder; 91.71% use vegetables and fruits that are not fit for human use as food for poultry and sheep; 94.71% use animal waste as organic fertilizers; 94.92% use the waste of birds as organic fertilizers; 96.5% sell cattle skin to make skin bags to manufacture milk; 89.4% use left over milk to make food for the birds or add it to cheese in order to make *mesh or salty cheese*; 7.89% recycle used oils to make soaps; 96.97% keep food in the refrigerator and re-offer it; 20% sell what is left over from slaughtered sheep to the butcher; 30% sell metal eating utensils so they can be re-cycled and used to weigh cereals; 81.4% use rubble of building and construction to fill up street holes and bumps; 31.25% use wood pieces to make ceilings for nests of birds and house utensils; 47.2% sell cardboard or spread it on the floors at home; 89.53% re-sell pieces of broken up steel or use it to mend things.

### **As to the applied results, the following has been accomplished:**

1. Training of a number of female coordinators who work in the Young Investor association on data collection
2. Training of coordinators and association's employees to run and organize meetings to raise the awareness and enhance the discussion abilities of rural women
3. Designed a training program to raise the awareness of rural women and enhance their knowledge and practices on how to deal with agricultural and house waste and how to maximize their use

### **The training manual includes units on:**

- Concept and importance of waste
- Non conventional fodder and organic fertilizers
- Planting and producing mushroom
- Making use of animal and house waste

### **Recommendations:**

- Enhance training on how to maximize the benefits of waste, by designing awareness raising programs for women in the villages of Bani Suif and other similar settings.
- Enhance the role of agricultural counseling and guidance and the role of agencies in charge of women affairs, in order to improve the level of their knowledge in the study site and other similar locations
- Review and develop a media policy highlighting the uses of waste and its importance to rural women in particular using audio visual mass media
- Assert the role of NGOs in creating a general atmosphere of awareness among women and urge them to adopt the correct practices
- Cooperate with NGOs in the area of the environment to raise the awareness of women and members of their families about the importance of sorting our garbage at its source
- Enhance the skills and behaviors of women to enable them to set up small enterprises to make use of agricultural waste and provide marketing services for their products through exhibitions.
- Organize training rounds in which house wives, women and school leaders would participate together with *Rayadat Rifiyat* and other influential public figures in the area of use of technology in developing the environment.
- Take into account the demographic, social and economic characteristics concluded by the study to design programs on how to re-cycle house and agricultural waste.

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