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SCHOOL GARDENING A HORTICULTURE AND NUTRITION EDUCATION TOOL

REPORT FROM UNDP-FAO-GOB INTEGRATED HORTICULTURE AND NUTRITION DEVELOPMENT PROJECT (IHNDP), BANGLADESH

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Introduction

In many developing countries, School Gardens have been used as a powerful tool to improve the nutrition and education of school children and their families and community. The UNDP-FAO-GoB joint-project called the Integrated Horticulture and Nutrition Development Project (IHNDP) has been operating in Bangladesh since October 2000. It recognised the need for rural schools to form a link between horticulture production and nutrition education. Accordingly, a School Nutrition Gardening programme (SNG) was developed and is being implemented in 30 schools covering 15 Bangladesh districts.

SNG Programme Activities

The SNG programme activities are aimed at adolescent girls from school grades eight and nine, aged 13 to 15 years. The objectives of this programme are to:

1. teach students basic horticulture techniques such as growing vegetables, fruit trees, herbs and spices; and
2. hands-on demonstrations of food preparation to create nutrition awareness.

IHNDP provides seeds and other gardening materials as well as a small fund for the schools to install fencing. Schools are responsible for preparing the land, sowing seeds and the maintenance of the garden. While in the School Garden, the students are supervised by the agriculture/home economics teacher in collaboration with the district extension staff. School gardening serves as the practical module of the school's agriculture and science curriculum.

One teacher from each school attended the Training of Trainers (TOT) course on "Horticulture food based nutrition strategies" organized by FAO. Teachers learnt the latest developments on nutrition gardening techniques and the appropriate use of garden produce in daily meals. The course also provided guidelines on how to teach practical aspects of the agriculture and home economics curriculum. Teachers also discovered how to encourage students to continue gardening activities and good nutrition practices without the support of the SNG programme.

Integration of School Gardens into the Schools' Curricula

In Bangladesh, agriculture and home economics are in the national educational curriculum. However, practical elements of these subjects are not adequately supported with field based horticultural activities. Therefore, SNG programmes were implemented to enable students to apply the theory learnt in their classrooms. The SNG activities are part of the weekly theoretical and practical sessions of each school.

Garden Layout

The gardens are approximately 52 m² with four raised beds (Figure 1). Organic gardening and Integrated Pest Management (IPM) are used with natural fertilizers (cow dung for example).

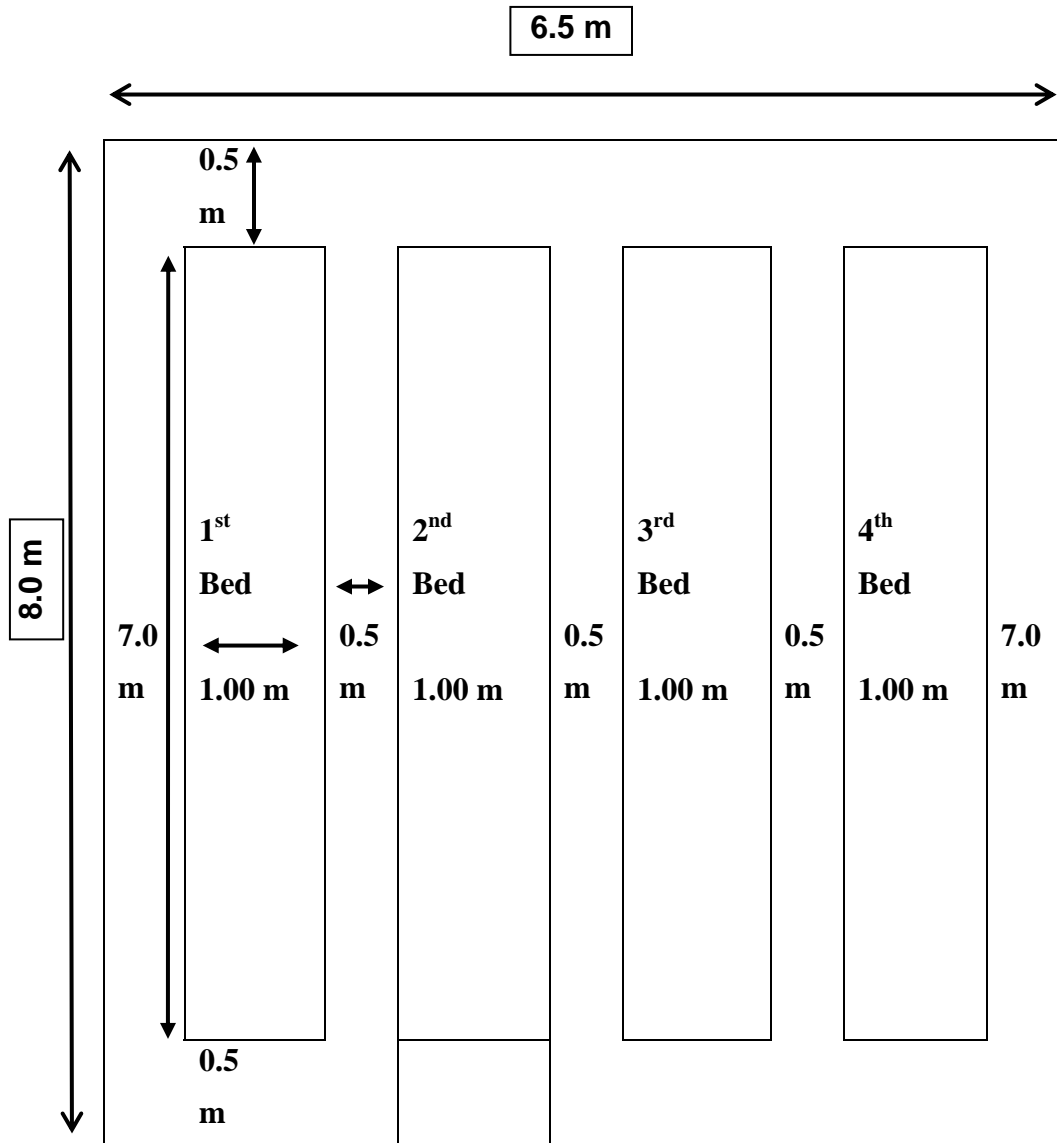


Figure 1: School nutrition garden layout

Garden Produce

Plants grown in the garden are selected based on seasonal availability, ease of growing, cultural acceptability and nutritional value. The plants are:

- fruits – guava and papaya;
- fruit vegetables – broccoli, cauliflower, French bean and tomato;
- leafy vegetables – Indian spinach, kangkong, red amaranth and spinach;
- root vegetables – carrot and radish;
- spices – green onion;
- stem vegetables – black colocasia and stem amaranth; and
- vine vegetables – yard long bean.

Nutrition Education

Practical lessons on nutrition are held during the school lunch break. Students are encouraged to make vegetables and fruit part of their school meals. The students are taught the importance of bringing lunch/snacks to school and were provided with free lunch boxes as an incentive.

Many children are from economically disadvantaged households and cannot afford to bring meals to school. In addition, parents and children were not aware of convenient school meals. As a result, the IHNDP taught the students how to prepare nutritious meals such as mixed vegetable-meat soup, green chapatti and green rice. These meals are easy to prepare and the ingredients are low cost and/or easily grown.

Results: Consumption of Fruit and Vegetables

Over 75% of the students ate leafy vegetables at least every other day. This indicates that students are inclined to eat vegetables frequently when given the appropriate information. The rest of the students (19% and 7%) ate vegetables more than three days a week, and between two to three days in a week, respectively (Figure 2).

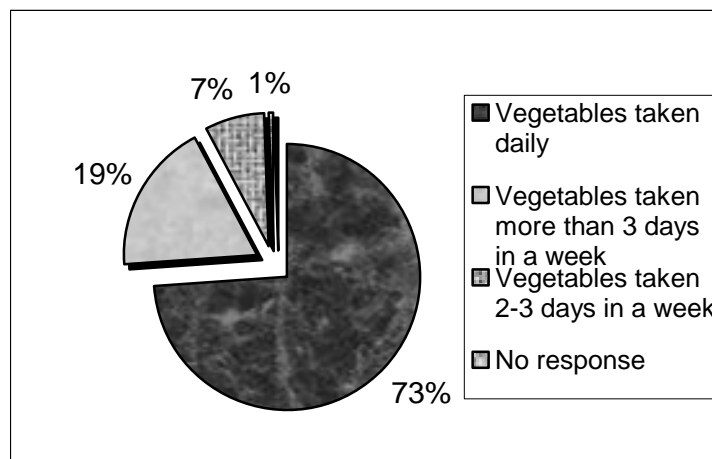


Figure 2: Vegetable consumption by students

Figure 3 shows that fruit consumption was lower than that for vegetables. Only 7% of the students ate fruit daily, 22% were able to eat fruit more than three days a week, while 60% of the students ate fruit 2–3 days a week (11% gave no response, which may be due to them not eating fruit in the previous 15 days). Fruit is more expensive than leafy vegetables and less accessible, because many of the households do not have a garden.

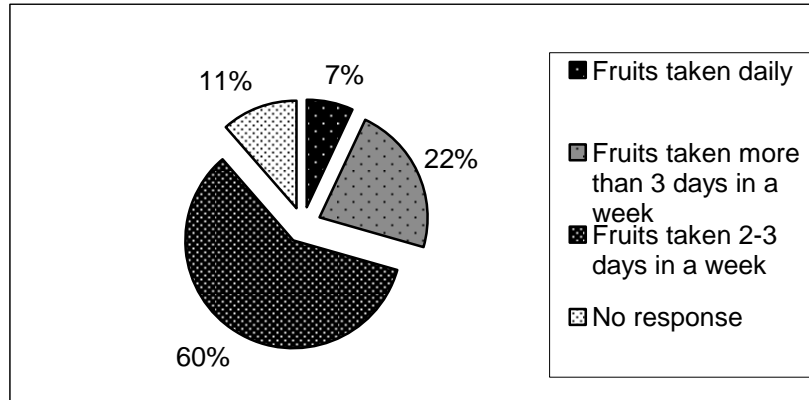


Figure 3: Fruit consumption by students

Results: Preparation of Fruit and Vegetable

It was encouraging that 88% of the students reported that their household prepared the recipes learnt in the nutrition education sessions of the School Gardening programme. (Figure 4).

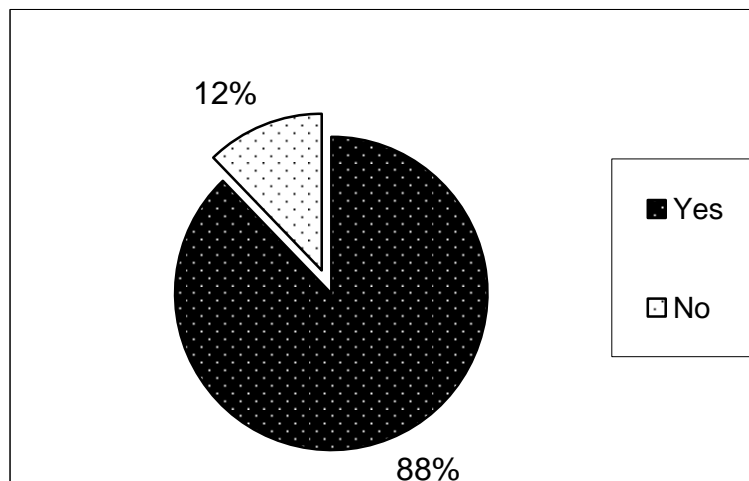


Figure 4: Preparation of vegetables-fruit based recipes

Students noted that they preferred eating leafy vegetables rather than yellow or orange vegetables.

Parent and Community Involvement

Most schools are located centrally in their village, with the student's families living nearby. Parents made a commitment to the management and protection of the School Garden and sometimes provided manual labour and resources. When interviewed, parents volunteered to look after the School Garden during school holidays. Some parents are on

the school management committee. Parents also made a commitment to provide a school meal for their children everyday consisting of bread, vegetables, an egg and a fruit.

Challenges and Solutions

A number of challenges were encountered during the SNG programme. These included the lack of a permanent garden border/fence and the lack of protection for the garden from pests and animals. Another problem is that the school grounds are also used for activities such as sport, play, and an annual fair, which interfere with the School Gardens.

The primary challenge for most School Gardens is the continued support of school management. Another important challenge is sustaining the gardening activities once project support has ended. Most schools noted that regular technical and financial support should continue until the SNG programme is well established. Collaboration with the community in supporting and managing the School Garden is essential for the ongoing success of the School Garden.