

## GUIDELINE FOR USES OF RURAL HOME ZONE LAND AREA FOR PRODUCTION OF CROPS FOR FOOD SECURITY OF THE NATION

M. A. SATTAR

College of Agricultural Sciences

International University of Business Agriculture and Technology (IUBAT), Uttara, Dhaka

### ABSTRACT

A study has been conducted regarding the proper uses of rural home-zone land area/space to every house of the country for proper production of maximum yield of various crops through-out the year for food security of the nation where some models have been established on the basis of high, medium and/or low lands of the housing-zone for growing of fruits, vegetables, cereal, arum, spices, tuber, bean or other crops. Shaks (leafy-vegetables) of all kinds can be produced with minor cares. All unwanted and undesirable housing places can be utilized for ginger/turmeric production and ponds and low lands for various fish production/farming.

**Key words:** Home gardening, home/house-zone, crops, rural area, yield, food security, nation.

### Introduction

No soil no crop, no crop no food and no food no existence of life. So, soil is the backbone of a nation. The more good quality the soil, the more best production of crops in the region. Bangladesh is a small country of 1,46,000 square miles and during 1950-55, there were only 35 million people, during this 75 years, the farming land is greatly reduced but population increased 4 times than those of 1950s. Here more than 1000 people live /sq km, that is the greatest compared to any other country of the world. Here is crisis of land for food production, crisis against living/survival, crisis of land for housing, building construction, plantation/forestry, marketing, industry, roads and highways (communication), sound education campus, play grounds, proper housing facility, fishing ground. Moreover, a country cannot proceed for the development without self-sufficient in food production. A hungry nation faces problems to all sides. Through modern technology with wide uses of land and huge production of lots of crops throughout the year the nation reached a self-sufficient as a food security country. Population growth is increasing but food production already increased several time more than that was in 1970s or 1980s. Again, here various natural disasters like flood, cyclone, high and/or irregular rainfall, river bank erosions, etc. widely affect the food situations of the nation. So govt. has to import food to face the food crisis/disaster of the nation. The more less the food crisis/problems of the nation, the more well for the govt. for proceed with development. For developing or utilizing more and more land under farming is difficult because of wide limitation of land in the region 80-85% of the rural people live in scattered conditions where every home/house surrounding space/area covers a good productive land those vacant space/zone can be utilized by every house owner or family members for producing of various crops like a lots of vegetables, fruits, or other crops all round the year. It will add a longer live the family members through minor field work exercise and using/eating of own fresh vegetable, fruits or other crops. During 1970s and 1980s author raised this questions hundreds of times for saving the farm land but none came in front for facing this challenge. Even in 1970 and 1980s, author advised for saving the roadside land from Bhaluka to Sripur where thousands of tons of jackfruits were marketed. Once this thousand ha of land were occupied with jackfruit plants now they are replaced by various industries and now no jackfruit garden is visible anymore. When I was a school boy in 1950s there were 10/12 sqkm plain land was utilized for rice production and now there were hundreds of families settled there and reduced crop field 60-70%. So, this is the real fact of the country i.e. country lost 50-60% agricultural land to various other purposes like housing and settlement, road and communications, marketing, industries, and many more other purposes. Recently, Sheikh Hasina-Honorable Prime Minister asked to the nation for proper utilizing and growing of more and more crops in the housing area of everyone. We must respect and follow her words for minimizing food security in the country as well as taking of fresh food to all families for better life and longer lives. Covering this

background, the present work has been undertaken to utilize all house surrounding areas for producing more and more crops and that has been established through adding of some models for solving the food problems of the nation.

### **Materials and Methods**

To develop these models and articles, here it was utilized my life time experiences from the following directions/sources-

1. Early 10 years of my life 1955-66, I passed my life with my parents and largely helped my father for field farming, and mother for farming of housing areas with different crops and vegetables throughout the year.
2. I observed and enjoyed the rural home-gardening/farming of several villages like Dhritpur (my village), Diga, Bokhura, Borogaon, Panihadi, Joshora etc. covering hundreds of families.
3. I observed and enjoyed the rural home-gardening/farming of numerous families of my relatives and neighbors.
4. As agriculturist, I observed and recognized the house farming of hundreds of families at different areas/regions of the country.
5. I participated numerous agricultural seminars, conferences and workshop at home and abroad, and collected a lot of experiences in the relevant field.
6. Reviewed hundreds of articles for our. Bangladesh J. Environ. Sci. Science in 1994-2023 (published 43 volumes).
7. As by birth, I collected such farming experiences to develop the models of these articles.
8. At BAU, Mymensingh hundreds of agriculture related field and lab. research works observed for 40 yrs. in 1970-2015.
9. I supervised 125 MS and 15 PhD students and co-supervised 120 MS and 10 PhD students where many of these covered on agricultural areas where through these and other reviews learned a lot of covering the related experiences.
10. As Dean, Faculty of Agriculture, BAU, Mymensingh, I visited hundred of farmers, fields with our final yr. 400/450 students in 2013-14 to review the field farming observations at 5-6 upazilas of Mymensingh district.

So, all these experiences largely helped to establish this article/guide:

### **Results on crop farming on guideline models**

The crop distributions at the rural housing environment under various situations are outlined here as guideline models in Fig. 1-5.

#### **1. Crop distribution on the basis of land type (Fig. 1)**

Crop distribution on the basis of high, medium and low land housing-zone are reported as guideline model in Fig. 1, where housing area/zone is always considered as at least medium highland. Sometimes outside the housing area there may be low land but land of houses are comparatively located on high land. Usually, housing zone can be mostly utilized with fruit and/or vegetable crops. Here commercial crops are not encouraged but vegetable gardening is widely recommended. Even 3-5 vegetable crops can be cultivated one after the other. Depending upon soil type, soil quality, pH values, nutrient contents, availability of water crops can be selected. Under Bangladesh conditions here 20 vegetable crops and 13 fruit crops can be cultivated. Because of low/poor space area of the region mostly vegetable crops are encouraged. First, it requires, 1-2 times expt. trails then best crops (HYV) can be planted as listed in Fig. 1 like as potato, bean, bottle, sweet white ground, tomato, cucumber, cabbage, coulfiflower, brinjal, chilli, arum, radish, etc. The crops produces better yields are best to be applied or uses for farming/garding crops. Regarding fruit crops some of them can be applied/used as best one like mango, jackfruit, papaya, litchi, guava, date, plam, black berry, lemon etc. sofeda, guava etc. (Fig. 1). Even one can follow the neighbour's home/house-garden's crops for best yield.

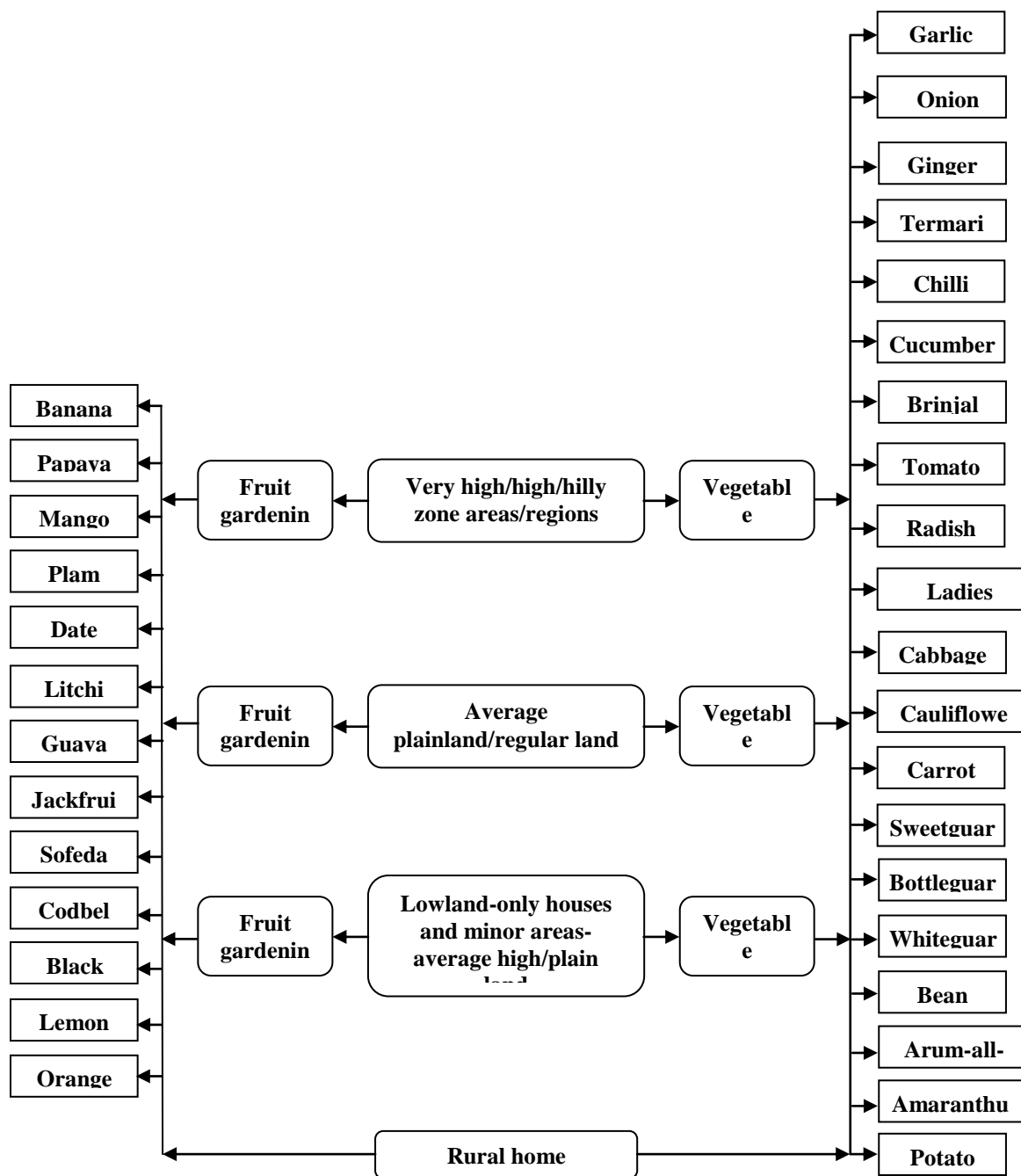


Fig. 1. Home gardening vegetable and fruit crops grown at high, medium high (plam) and law land regions (zones) of Bangladesh (Ref. Sattar, 2023, this article)

2. Crop distribution/farming on the basis of macha/platform (Fig. 2)

Most rural houses are made of tin, bamboo, tin-shed, jute sticks, where each shed, wall etc. Themselves work as macha (plot form) for supporting vegetable crops like bean (sim), cucumber, sweet/white ground, bottle ground, zingha, kakrul etc. and minor pits with proper manures and fertilizers are enough for good production of family and neighbour consumption of vegetable crops (Fig. 2) needed some bamboo platform (macha) can also be made/developed over/side of each pit.

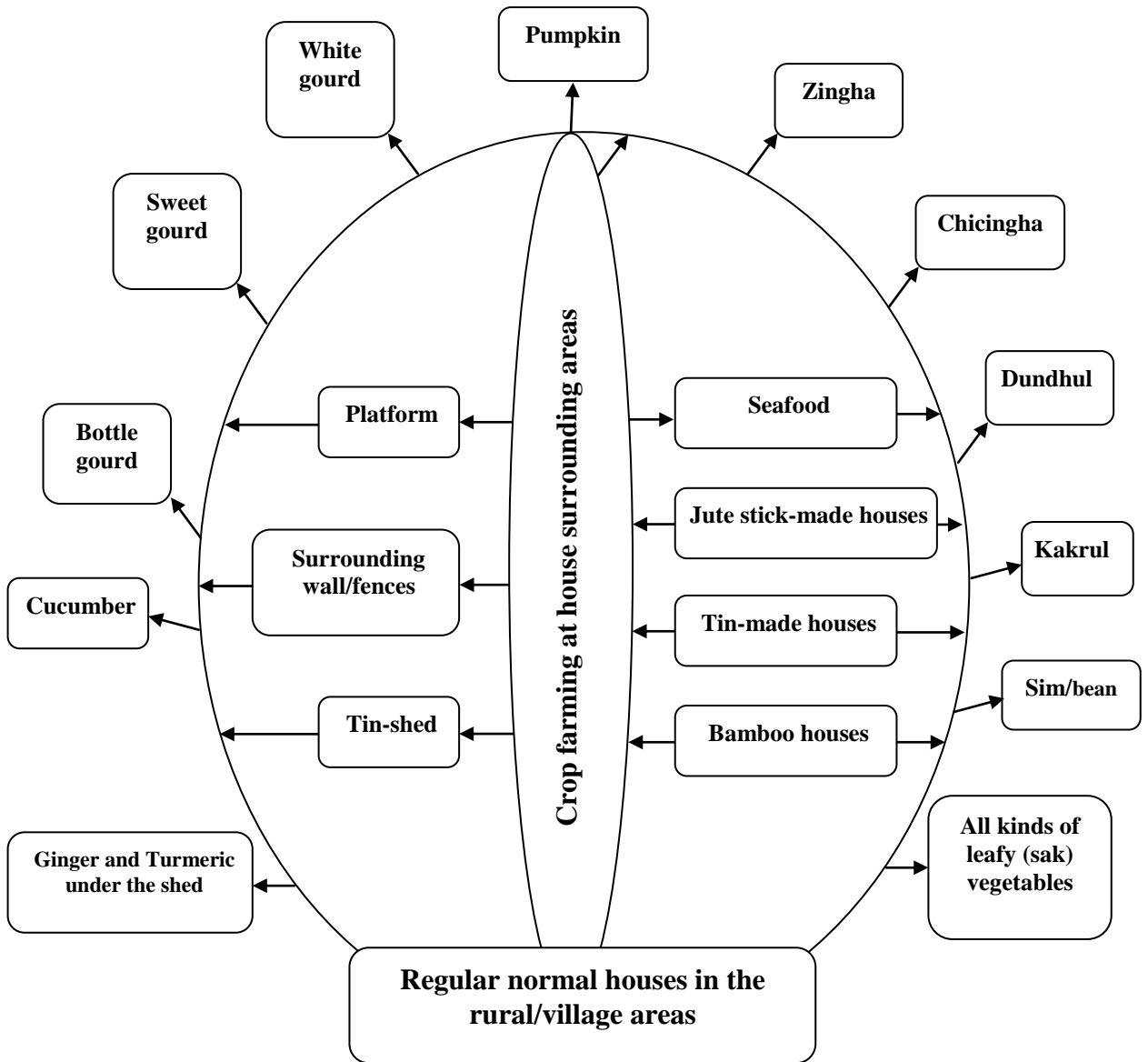
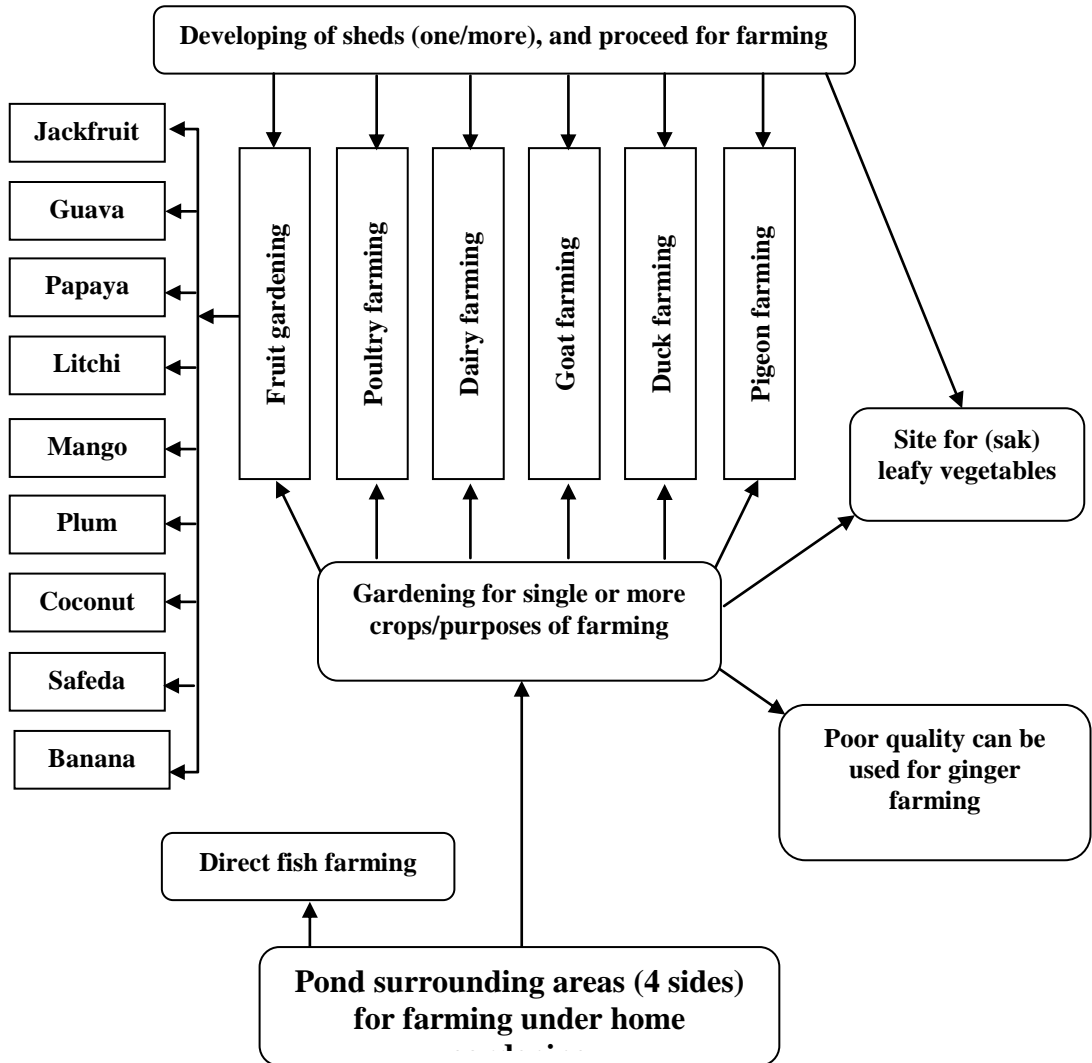


Fig. 2. House gardening without additional platforms (Macha) in the area

**3. Home gardening/farming on pond side areas (Fig. 3)**

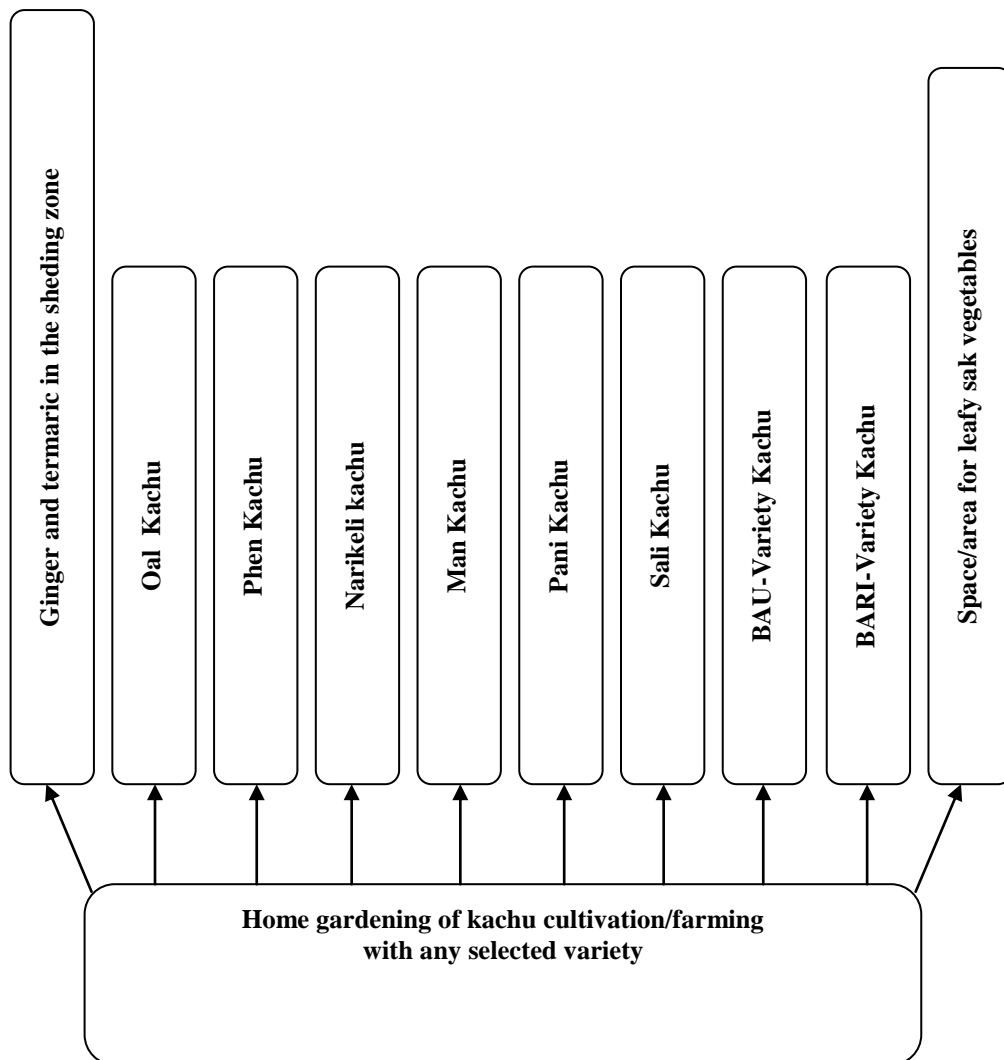
Usually, most farm houses at the local areas have at least one pond where pond-sides (4 sides) can be utilized for minor farming of poultry, dairy, duck, goat or even pigeon farming covering one or two sides and other sides can be utilized for some fruits like mango, litchi, guava, papaya, cocunut, lemon etc. and vegetable crops (Fig. 3). In case of minor ponds these duck and fish farming can be applied that is also a profitable farming. Even a small farming with 2-3 cows or 3-5 goat can also be started with a shed or only a poultry farming is good as a minor/good business and profitable farming on pond banks on near to housing area (Fig. 3). Ponds can be directly used for fish farming.



**Fig. 3. Home gardening around the pond-side (4-sides) for farming of fruits crops and/or dairy, poultry, goat, duck or geigion farming (single and/or mixed farming) (Ref. Sattar, 2023, this one)**

**4. Kachu (arum) farming as home/house gardening crops (Fig. 4)**

There are 5-8 arum (kachu) are available in the country like BARI, BINA, BAU-areas and they are (seeds/corms) available on markets or neighbours and can be grown with a minor labour cost with minimum cares. Once kachu vegetable was neglected but due to high food values they are largely cultivated particularly at the house garden crops. With other crops and vegetables arums can also be cultivated for family consumption (Fig. 4). These are poormen's rich quality food in the rural areas of the country low lying kachu zone can be used for fish farming too.



**Fig. 4. Home gardening of Kachu cultivation/farming with any selected variety**

5. Home gardening crops/system under agroforestry plan (Fig.5)

Under agroforestry farming system in the home/housing areas the fruit plants like mango, sajina, guava, orange, jackfruit, banana, kul, litchi etc. can be used as shading plants. Other shading plants can be used like karay, dhaincha, neem, gigha, bamboo etc. where the crops encouraging crops are ginger, termaric, til, kachu including different vegetables like cucumber, bottle guard, amaranthus, ladies finger, zingha, different shaks (leafy vegetables). Here shading plants can also be used for supporting of vegetables like cucumber, all gourds etc (Fig. 5).

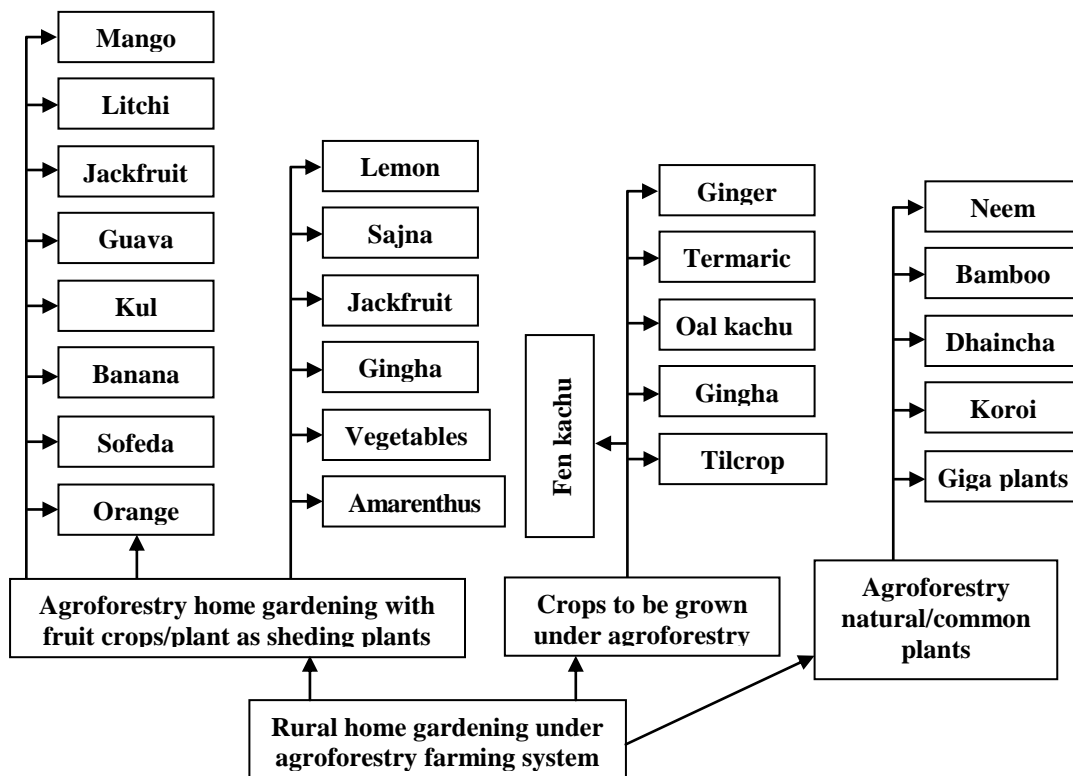


Fig. 5. A schematic outline of the model of rural home-gardening under agroforestry farming system (Ref. Sattar, 2023; this article)

Acknowledgements

This article is dedicated to Professor Dr. M. Shohidullah Miah, Dean, College of Agricultural Sciences, International University of Business Agriculture and Technology, Sector 10, Uttara, Dhaka for his sincere appreciation and encouragement.

**References**

1. M.A. Sattar, 2016. Millennium Text Book of Environmental Science, ISBN 978-984-33-8200-0, 604 pages.
2. M.A. Sattar, 2013. Models in Environment for Human Peace, ISBN 978-984-34-6108-0, 137 pages.
3. M.A. Sattar, 2001. Models of degradation and pollution in Bangladesh environment, ISBN 984-32-0017-9, 33 pages.
4. M.A. Sattar, 2022. Millennium Text Book of Soil Science, ISBN 978-984-34-3037-3, 556 pages.
5. M.A. Sattar, 2021. Models in Bangla Literature, ISBN 978-984-34-7487-2, 136 pages.