



A multi tier orchard (MTO) with intensive vegetables cultivation at the bottom

Establishing Multi Tier Orchard in CHT Hills & Valleys towards Food Security

Summary:

Orchard usually does not come under blooming followed by bearing before half a decade. Before optimum blooming the mid and bottom tier-spaces of the orchard could be utilized in an effective way, which could be a significant measure in aspect of today's food security.

Introduction:

Orchard is a plantation of variety of fruit seedlings or saplings, mainly established in the homestead. The commercial one also established outside of home-garden. There are two common varieties of orchard excluding the most wanted recent one as follows:

1. Traditional orchard
2. Mixed orchard
3. Multi tier orchard

In our country context, it is observed that the homestead farmers utilize the homestead or its high land with orchard plantation just with a sole fruit crop like Mango, Litchi, Indian Olive etc. In case of space

utilization- most of the time it remained unutilized. Sometimes, the spaces are utilized with one or two crops like vegetables in a very unplanned way. Orchard usually does not come under blooming followed by bearing before 6 years. This is one of the major reasons (as it delays yielding return), the farmers are not interested for orchard. Which should be overcome gradually responding today's crucial food security context using technology like MTO in fallow hills.

Importance:

The orchard coverage in Bangladesh is still insignificant i.e. about 4,800 hectares and total annual production is about 12,800 MT (Source BOS 1999), which is increasing in every year just in the traditional form. Again shifting cultivation is still the largest agro source of livelihood in CHT community. It destroys the fertile hills by soil degradation as well as damaging its bio-diversity destroying perennial plantation. Further, farmer's nomadic life is also a challenge for systematic development, particularly reaching them to educational opportunity. In this regard, alternative cropping system with integrated horticulture with increasing crop production discouraging shifting cultivation is a felt need. To make this plan a realistic one- MTO could be a remedy in the CHT. It would ensure food security checking soil erosion with scope of self-employment. So, farm family would be stationed leaving nomadic nature at least for the attraction of costly orchard,

MTO as an Advantage:

The first and foremost advantage is- one time investment, which we utilize from the works of our forefathers. The orchard is a typical example of one time sustainable plantation. Practically, no additional cost for fencing etc. per year after establishment. Further, the intercultural operations are beneficial to all other standing crops. Simultaneously, the fertilizer could be used in a most sharing way. Lastly, long term planning is possible in a cost effective way

Farmers are impassive in Orchard- why?

It is fact that orchard usually does not come under bearing before 6-8 years, which is a long term investment having no immediate return, even there might be technical uncertainty also from such heavy basket investment. Finally, social & natural insecurity; which could be a challenge from this one time big investment.

Methodology:

MTO Establishment:

A medium homestead with a size of 20 decimal (8712 sq. ft); can accommodate minimum 15 Lychee saplings adapting effective pit with recommended dose of fertilizer in every pit. The spacing will be given 20 ft x 20 ft, which will cover 6000 sq ft. The rest can be used for residential infrastructure with other needful plantation. Since it is Lychee, which takes 6-8 years for full bearing so, effective planning should come to use its spaces under farming integration.

MTO Planting Methodology:

As 20 feet is a big space so, we can manage 2-3 varieties of fruits in the plant and row spaces of the newly set orchard. One could be guava/ lemon in the 10 ft plant distance from Lychee i.e. 10 ft. plant to plant. The valuable Custard Apple in the middle of the row i.e. 10x 10 ft, followed by Papaya in between the Custard Apple and Lychee row maintaining 10 ft. distance from one another. The number comes 15 Litchi, 30 Custard Apple and 60 Papaya. The rejuvalent arum and other aroids like ol could be planted up to 2nd year, while pineapple, ginger or turmeric from the 3rd year to permissible onward. We recommend for bottom space utilization with root crops up to 6th years minimum.

One line fruit crop like lime could be planted in the extreme south allowing full time sunshine overcoming its short canopy as normal protective fence. However, just outline of the beds the longer quick growing fruits like banana could be designed in the west and north direction without hampering the sun shine in most of the day time.

Planting Pattern of MTO:

MTO with Quadruple Varieties

Lychee +Lemon/lime/guava +custard apple +papaya +arum, ol/ pineapple, ginger, turmeric etc

MTO with Triple Varieties

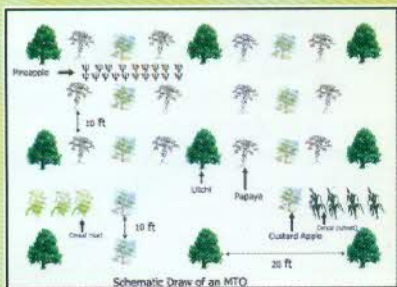
Lychee +custard apple + papaya + arum, ol/ pineapple, ginger, turmeric etc

MTO with Double Varieties

Lychee + papaya + arum, ol/ pineapple, ginger, turmeric and short cereal, where applicable.

MTO with Single Varieties

Lychee + papaya/ banana and short cereal, where applicable



A possible model draw of an MTO

Conclusion:

It is fact that NGOs are busy for improvement of the marginal homestead owners but it is again true that ignoring the need of the middle class farmers, this will increase the number of hard core poor. In this regard we feel to address the middle class farmers also. It would help not only the middle but also the poor, creating direct and indirect livelihood impact. Further orchard creation is no more any new initiative but multi tire initiative is a new approach. Definitely this approach would also support food security for all community people. Statistics shows that total 199,79,932 households belong 7,379 square Km. of lands, which is 5% of the total land acreage of Bangladesh? It ensures more than 30% net return against total farm-products. So, we must realize this sector as a resource benefit and if we adapt our own plan and technology to utilize this small land/ spaces effectively, every household can maintain at least their minimum basic needs from it.



A bloomed MTO at hill with potential prospect



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