Pre-selected Topics from the Kit Introduced to Women Farmer Participants

1. Kitchen garden for better living (Circle garden)
2. Vegetables for human nutrition
3. Off-season vegetable production
4. Vegetable seed production
5. Optimum use of marginal land with agroforestry system
6. Multipurpose tree species and their uses
7. Feed shortages and seasonality issues of livestock in the hills
8. Propagation of fodder grasses
9. NB-21 grass on terrace risers and bunds
10. Preparation of organic manure
11. Effective methods of compost application in hill farms
12. Efficient method of organic matter application for maize
13. Indigenous species for green manuring
14. Sesbania cannabia and S. rostata as green manure
15. The pesticide problem
16. An introduction to integrated pest management
17. Ayurvedic pest management in Nepal
18. Chinaberry tree (*Bakaino*) for pest control

Other Topics Introduced

1. Smokeless *chulo*
2. Liquid manure
3. Improved shed
4. Off-season onion cultivation
5. Citrus nursery (orange)
6. Manakamana-I-maize variety
7. Annapurna 1,2,3, & 4- wheat variety
8. Introduction of buckwheat
9. Improved *dhikki* (rice husker)
10. Solar cooker
11. Improved *jaanto* (rotary quern)
12. Pressure cooker (observed during tour)

Introduced but Not Tested

1. Feed shortages and the seasonality issue of livestock in the hills
2. NB-21 grass on terrace risers and bunds
3. Effective method of compost application in hill farms
4. Efficient method of organic matter application in maize
5. Sesbania cannabia and S. rostata as green manure
6. Chinaberry tree (*Bakaino*) for pest control
7. Annapurna 1,2,3 and 4 wheat varieties
8. Buckwheat

9. Improved *dhikki*
10. Improved *jaanto*
11. Pressure cooker

Tested but Rejected

1. Solar cooker

Not adequately demonstrated (Rejected)

1. Improved *dhikki*
2. Improved *jaanto*

Evaluation of Agricultural Technologies for Farm Women

Total topics introduced =	30	Accepted for trials =	18
Topics from Kit =	18	(12 Kit + 6 New)	
New topics =	12	Not tested =	11
		Rejected =	3

Percentage of technologies accepted for trial (18/30) = 60%

Of the introduced technologies, 11 were not tested due to:

1. Inadequate time -

a. 6 months was not adequate for some technologies as they required longer duration for trials

b. Some technologies needed specific seasons

(i) compost application on hill farms is most effective in Feb/March

(ii) efficient method of organic matter application in maize should be carried out in Feb/March

2. Unavailability of required resource material

a. NB-21 grass on terrace risers and bunds
b. Chinaberry tree (*Bakaino*) for pest control

From the 12 new topics introduced, three technologies were not tested and three were demonstrated during trainings but not accepted for trials.

Not tested

1. Improved maize variety - Manakamana-I can only be planted in Feb/March

2. Trials of buckwheat varieties and wheat varieties failed due to lack of rain since mid-September, as the area is rainfed

3. Pressure cooker was observed in field tour, and was found to appeal to Gorkha women; they have plans to try them now

Rejected

1. Improved *dhikki* (rice husker)

2. Improved *jaanto* (rotary quern)

3. Solar cooker

The reasons for rejection of technologies are given below.

1. Improved *dhikki*

(a) Too complicated - rope and pulley system

(b) Increases manpower requirements - normally one person lifts the *dhikki* and uses one hand to push the grain (using a long stick with a cloth tied at the tip). This new improvised tool would require two people.

(c) However, it must be noted that this topic was presented only with a rough drawing; perhaps the results would have been different if the women were to see an actual improved *dhikki* working.

2. Improved *jaanto*

(a) They would not risk their existing jaanto to reshape its teeth as it is an important tool essential for every day use.

(b) Same point as (c) in the above description of *dhikki*.

3. Solar Cooker

(a) The construction is too complicated and it needs a person to keep turning it during the day to face the sun.

(b) Need to buy various materials - plastic, aluminium foil, etc., from outside for construction.

(c) It is not a dependable tool (it depends on availability of sunlight).

Preference Ranking of Accepted Technologies

The women participants of Benigaon and Ranagaon were asked to rank technologies introduced and tested according to their preferences. The result is the following list:

1. Optimum use of marginal land with agroforestry
2. Multipurpose tree species and their uses
3. Kitchen garden for better living
4. Vegetables for human nutrition
5. Liquid manure
6. Preparation of organic manure
7. Indigenous species for green manuring
8. Propagation of fodder grasses
9. Citrus nursery (orange)
10. Off-season onion cultivatior
11. Off-season vegetable
12. Vegetable seed production
13. Smokeless chulo
14. Improved shed
15. Ayurvedic pest management in Nepal
16. An introduction to integrated pest management
17. The pesticide problem
18. Pressure cooker

The Farm Women's Reasons for Selecting the Technologies

1

Optimum Use of Marginal Land with Agroforestry System

- Highly liked by participant women farmers
- Reasons

1. Fodder, fuelwood, fruits, timber, etc. can be grown on small parcels of marginal land which are lying fallow at present.

2. It reduces the time and labour being spent collecting fodder and fuelwood, from distant forests, especially during the fodder scarcity period (October-May). On an average, about six hours a day is spent to collect a bundle of fodder and fuelwood.

3. Agroforestry on marginal land helps to protect the forest for regeneration since pressure on forests will lessen.

4. In livestock management a gradual transition from winter-free grazing practice to stall-feeding provides continual fodder supply with minimum extra work.

5. Income generation is enhanced, especially through orange and winter crop production, once the winter-free grazing practice is controlled and saplings and crops are protected.

2

Multipurpose Tree Species and Their Uses

- Highly liked
- Reasons

1. Supplies their most important needs -- fodder and fuelwood

2. Saves time and labour in collecting fodder and fuelwood from forests

3. Multiple products - fodder, fuelwood, timber, leaf litters, fruits, etc. are availalbe and nitrogen fixation takes place, all of which are useful to them.

3

Kitchen Garden for Better Living

- Accepted
- Reasons

1. Provides different types of fresh vegetables round the year

2. They do not need to buy vegetables

3. Everybody can learn how to grow vegetables in a permanent way for home consumption

4. Even wastes such as dirty water and household waste can be reused to grow vegetables

5. Double dig bed gives long-term production

a. **Circle Garden**

- Accepted
- Reasons

1. Fresh vegetables can be harvested during dry season

2. Wastewater and household manure can be used to grow vegetables

3. Diverse vegetables can be grown in a small area

4. Simple and easy to make

4
Vegetables for Human Nutrition

- Accepted
- Reasons

1. Vegetables are important for the good health of the family

2. Different types of vegetables are useful in preventing nutrient deficiencies and diseases

3. Vegetables add taste and acts as an appetiser in daily diet (with rice). (Sometimes, during scarcity periods, grain, starch, and mustard cakes are used instead of vegetables.)

4. Ample amount of vegetables saves foodgrain

5
Liquid Manure

- Accepted
- Reasons

1. Easy to prepare using local materials

2. Effective in controlling common pests (aphids, caterpillar, ants)

3. Promotes quick and healthly growth of plants

6
Preparation of Organic Manure

- Accepted
- Reasons

1. It maintains soil fertility

2. Need not buy and carry chemical fertiliser (urea)

3. Simple to prepare using local plant materials

4. A big help in improving the soil fertility as the livestock manure alone is insufficient

5. It can be prepared in the field (on-site) which saves labour and time (need not carry manure)

7

Indigenous Species for Green Manuring

- Accepted
- Reasons

1. Most of the plants with green manuring properties are locally found (*asuro, titepati, khirro*, ricebean, etc.)

2. It is easy to use

3. Acts as mulch, pest repellent, and manure - multiple benefits
4. Need not buy chemical fertiliser from the market

8

Propagation of Fodder Grasses

- Accepted
- Reasons

1. Fodder grasses are of special importance to livestock production

2. Various techniques of propagation are helpful in the propagation of local and introduced fodder species, example: *amliso*, napier, etc.

9

Citrus Nursery (Orange)

- Accepted
- Reasons

1. Oranges are one of the important cash crops of the locality

2. They need not buy expensive saplings and transport them over a long distance

3. Orange saplings are in great demand but no reliable nursery to supply them are available

10

Off-season Onion Cultivation

- Accepted
- Reasons

1. The trial carried out by the women themselves proved successful

2. Does not need much watering/irrigation unlike onions planted in winter (dry season, normal planting season)

3. The bulb can be harvested during scarcity periods, hence fetches a good price

11
Off-season Vegetable Production

a. Not accepted - Techniques for winter season

Reasons - It is complicated - need to buy plastic sheet and construct structure which is suitable for commercial growers

b. Accepted - Techniques for dry season (using wastewater)

Reasons - As the area has a water shortage problem, waste water can be reused to grow vegetables. Hence, vegetables do not require extra water.

c. Rejected - seedling (sub-topic) production in plastic house and protection of seedlings from cold

Reasons - They are tedious and expensive processes - difficult and time consuming

12
Vegetable Seed Production

- Accepted
- Reasons

1. Good seeds are important for good crops and good seed is not found easily these days.

2. Seed are a constraint during planting time as they are not available locally (have to depend on Gorkha market)

3. How to select the best plant for good seed production is a simple yet effective method. It yields pure seed, saves money, and provides seed at the time required.

13
Smokeless *Chulo*

- Accepted
- Reasons

1. Smoke-free cooking area

2. Saves firewood by almost 50 per cent

3. Small pieces of wood from livestock fodder can be used for cooking

4. Two items can be cooked at the same time (saves time)

5. Easy to construct using local materials

14
Improved Shed

- Accepted
- Reasons

1. Comfortable, smooth, and dry floor space for the animal

2. Urine can be used to fertilise crops (vegetables)

3. Need not scoop the urine from the floor (especially during rainy season)

15
Ayurvedic Pest Management in Nepal

- Accepted
- Reasons

1. Plants with different odour when planted together on vegetable plots reduce pest damage

2. When plants with varying heights, leaf size, and shape (broad and narrow) are planted together, more vegetables can be grown on a limited space

3. With diverse planting, different vegetables can be harvested

16
An Introduction to Integrated Pest Management (IPM)

- Accepted
- Reasons

1. The elements of an IPM strategy are simple, most of them are being practiced (they only have to be improved)

2. Some of the alternatives tried in the field proved successful

3. Need not depend on chemicals to control pest

Example

1. *Titepati* extract - controlled aphids

2. Cow wine - 1:4 (urine: water) - effective in controlling aphids in green leafy vegetables

3. Woodash effective against ants

New ones tried by the women

1. *Simali* + *asuro* mulch - controlled red ant in vegetable nursery

2. *Simali* + *asuro* + *titepati* mulch - protected potatoes from red ants (on-going)

17
The Pesticide Problem

- Accepted
- Reasons

* Metacid and BHC are in use (DDT is rarely used)
* It is only an awareness (caution)

1. It is harmful to human health, if not used carefully

2. It can cause damage to animals, birds, fish, bees, and other beneficial organisms

3. Chemicals (such as BHC) can pass on to children through breast milk

4. Alternatives to chemical pesticides are safe and easy to apply

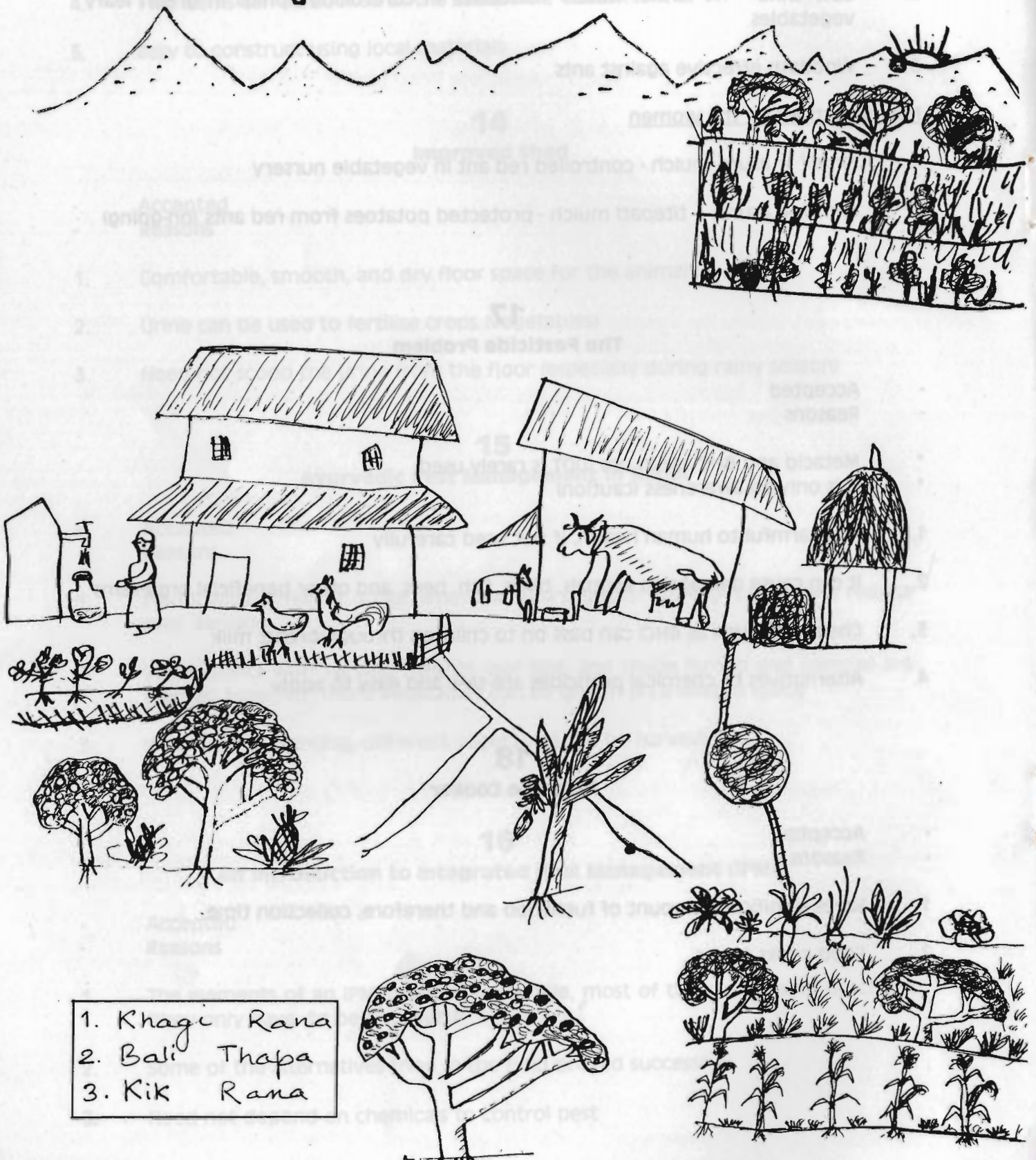
18
Pressure Cooker

- Accepted
- Reasons

1. Saves significant amount of fuelwood and therefore, collection time.

2. Food cooks faster

Integrated Farming System



1. Khagi Rana
2. Bali Thapa
3. Kik Rana