Title of the course:

1. Current Issues in Farming and Environment

2. ರೀತಿಯಲ್ಲಿ ನಿರ್ದೇಶಿಸಲು ಸಿದ್ಧಿ ಅನುಮೋದನೆ

Introduction: Agriculture sector provides livelihood to roughly 65 per cent of the population. Although its contribution to the Gross Domestic Product is on the wane, it is nevertheless the mainstay of rural economy. During the first census of free India, a food grain production of about 50 million tons was recorded. This was hardly sufficient to meet the food requirements of rapidly increasing population. Hence, the nation was constrained to go for large scale import of food grains.

It was at this juncture that the newly developed Green Revolution Technology held out lot of promise for increasing production. The adoption of technology necessitated massive investments in agriculture sector. The initial response to the newly adopted technology was overwhelming and reflected in quantum jump in agriculture production. But perhaps in our eagerness to increase production we lost sight of long term consequences which are evident today. At present there is stagnation in agricultural production and additional inputs flowing into production component are not yielding commensurate returns. Experts attribute this factor to indiscriminate use of inorganic fertilizers and pesticides which has impaired soil fertility. Excessive use of fertilizers and pesticides has adversely affected health and environment and if we take the cost of health and environment into consideration, one wonders whether the technology has been a boon or a bane. The training package is set in this background to make a dispassionate analysis of green revolution technology and also examine issues which have cropped up around this technology. The package also aims at creating general awareness regarding looming threat of large scale destruction of biodiversity, climate change and its effects on food security, exodus of farming community to urban areas in search of viable alternatives and also dangers associated with unfettered genetic manipulation of crops.
Participants: Officers of Agriculture, Horticulture, Forest, Animal Husbandry, RDPR, Fisheries, Sericulture departments, NGO representatives, social activists and select elected representatives.

Duration: Four days

No. of programmes: 10

Aim:

The main aim of the course is to acquaint the participants with a rational appraisal of green revolution technology and its impact on food security, health and environment and also sustainable agricultural practices. The participants will also be given exposure to the present day challenges before agriculture and environmental sectors like climate change and its impact on food security, threat of large scale destruction of biodiversity, disillusionment of farming community and consequent exodus to other sectors and also merits and demerits of genetically modified crops.

Session – 1

Duration: Two hours

Content:

Registration of participants, mutual introduction, group formation and listing of expectations.

Objective:

The objective of the session is to enable the participants to identify each other and participate in the training programme in an informal manner without inhibitions. Specific tasks like time management, material management, compilation of activity reports and cultural activities will be the responsibility of specific groups on daily basis. Unrealistic expectations entertained by the participants will be clarified.

Methodology:

Mutual introduction of participants by random picking of figures of animals, fruits or vegetables which represent only half the portion and finding the complementary partner.
Hints: Name
Designation
Educational qualifications
Outstanding achievements in service, if any
Any other information worthy of disclosure

- Group formation is to be done on random basis so as to constitute four groups
- Expectations of the participants are elicited by brain storming and listing on flip chart

Performance aids:
Registration form, white board, marker pen, brown paper and figures of animals, fruits or vegetables which represent only half the portion.

Expected outcome:
At the end of the session participants will be able to understand the outline of the course and also get tuned to the participatory mode of training programme.

Hints to the speaker:
Since most of the training sessions are participatory in nature the speaker should create an informal atmosphere for free and frank expression of views and wholehearted participation by the participants.

Session – 2

Duration: Two hours

Title: Appraisal of green revolution technology

Content:
Farming before and after the green revolution

- Historical perspective - food grain production, Bengal famine, large scale import of food grains and compelling need for adoption of innovative technologies
- Essence of green revolution technology
1. Cultivation of improved and high response varieties of crops in preference to local varieties.

2. Bringing more cultivated area under irrigation

3. Liberal application of inorganic fertilizers

4. Use of pesticides as first weapon against crop insects and diseases

5. Focus on maximization of production and not on resource conservation

6. Second/continuing green revolution

Merits of Green Revolution Technology

- Quantum jump in food grain production
- Export of food grains on limited scale
- Semblance of food security for the growing population
- Nation is almost self-sufficient in food grain production

Deleterious Consequences:

- Stagnation in food grain production
- Use of inorganic fertilizers has destroyed biological activity of soil and rendered it less fertile
- Health hazards associated with use of pesticides
- Increase in area of problematic soils in command areas
- Green revolution confined to few areas and few crops
- Gradual loss of enormous indigenous genetic diversity
- Distortions in subsidy flow has only benefitted large farmers
- Impact of green revolution not spectacular in dry farming areas

Objective:

The objective of the session is to make a rational appraisal of the merits and demerits of green revolution technology and the lessons it holds for future of agriculture in the country

Methodology:

Tone setting to the topic, Group discussion, consolidation, presentation by participants and summing up by the speaker.
Expected outcome:

At the end of the session participants will be able to weigh the pros and cons of green revolution technology and arrive at rational decisions relating to sustainable and remunerative crop management

Performance Aids:
White board, marker pen, brown paper

Session – 3

Duration: Two hours

Title: Impact of modern agriculture on health, environment and biodiversity

Content:

✓ Changes in food habits.
✓ Importance of wholesome diet consisting of cereals, pulses, fat and vegetable oils and fruits and vegetables
✓ Diversity in consumption pattern over geographical area
✓ Poisonous chemicals in food
✓ Health and environmental hazards associated with the use of fertilizers and pesticides
✓ Need for conservation of biodiversity

Objective: The objective of the session is to describe what constitutes an ideal diet for safeguarding health and also hazards associated with indiscriminate use of fertilizers, pesticides and chemicals in food production and processing

Methodology:
Group discussion, consolidation, presentation by participants and summing up by the speaker

Performance aids: White board, marker pen, brown paper
Expected outcome: At the end of the session participants will be able to grasp the impact of modern agriculture on changes in dietary pattern, importance of wholesome diet and health and environment

Session – 4

Duration: Two hours

Title: Sustainable agriculture:

Content:

- ✓ What constitutes sustainability and its importance
- ✓ Present production level and its potentiality
- ✓ Low /No cost technology, Indigenous technical know-how
- ✓ Organic farming
- ✓ Integrated farming for diversification of income source of farmers

(No specific recommendations but a positive message that farming is a rewarding profession)

Objective:

The objective of the session is to explain what constitutes sustainable practices in agriculture so that the resources available with the farmer are put to proper use for optimizing production rather than maximizing it.

Methodology: Lecture, interaction with the participants, PPT, case studies, success stories, Panel discussions with practicing farmers.

Performance Aids: White board, marker pen, brown paper, multimedia projector

Expected outcome: At the end of the session participants will be able to describe sustainable agricultural practices that are currently practiced by the farming community
Session – 5

Duration: Two hours

Title: Analysis of poverty

Content:

- What constitutes poverty
- Poverty in agriculture sector
- Lack of capital for adoption of technology
- Debt trap and vicious circle of poverty
- Alarming increase in farmers’ suicide
- Programmes meant for alleviation of poverty among these groups

Objective:

The objective of the session is to explain the problems associated with vulnerable groups and explore possible solutions to them.

Methodology: Lecture, interaction with the participants, PPT, case studies, success stories

Performance Aids: White board, marker pen, brown paper, multimedia projector

Expected outcome: At the end of the session participants will understand the peculiar problems associated with vulnerable groups and also possible solutions to them.

Session -6

Title: Natural resources management on watershed basis

Duration: Two hours
Content:

- Importance of soil and water and need for their conservation and scientific management
- Biodiversity
- Treatment of arable and non arable lands
- Common property resources management (village Tanks, pasture lands)
- Role of community based organizations.

Objective:

The objective of the session is to explain the basic principles of natural resource management particularly on watershed basis

Methodology: Lecture, interaction with the participants, PPT, case studies, success stories,

Performance Aids: White board, marker pen, brown paper, multimedia projector

Expected outcome: At the end of the session participants will understand the basic tenets of management of natural resources particularly on watershed basis

Session – 7

Duration: One day

Field Visit: Visit to Outstanding farms

Objective: The objective of the session is to show to the participants the merits of sustainable agricultural practices, watershed projects, harnessing non-conventional sources of energy, rain water harvesting and ecosanitary toilet device and also interact with practicing farmers who have outstanding achievements to their credit.
**Expected outcome:** At the end of the session participants will be able to convince for themselves the merits of sustainable agricultural practices

**Session -8**

**Title:** Feed back on field visit

**Duration:** Thirty minutes

**Content:** Written feedback from participants. Discussion on observations of the participants during field visit and clarification of doubts

**Performance Aids:** White board, marker pen

**Session -9**

**Title:** WTO and its implications for Indian agriculture

**Duration:** Ninety minutes

**Content:**

- Salient features of WTO and recent additions, deletions and modifications
- Subsidy
- Clauses relating to imports and exports
- Clauses relating to process and product patents
- Strategy to avail maximum benefits under the provisions of WTO

**Objective:** The objective of the session is to provide an overview of WTO and its implications for Indian agriculture

**Methodology:** Lecture, interaction with the participants, PPT, case studies

**Performance Aids:** White board, marker pen, brown paper, multimedia projector
Expected outcome: At the end of the session participants will explain important clauses of WTO which have direct bearing on Indian agriculture

Session – 10

Title: Biotechnology and Genetic Engineering

Duration: Ninety minutes

Content:
- Salient features of Biotechnology and Genetic Engineering – an overview (World scenario)
- Genetically modified crops
- Pros & cons of cultivating genetically modified crops
- Prospects of GM crops

Objective: The objective of the session is to provide an overview of Biotechnology and genetic engineering and examine issues surrounding these areas

Methodology: Lecture, interaction with the participants, PPT

Performance Aids: White board, marker pen, brown paper, multimedia projector

Expected outcome: At the end of the session participants will understand the implications of Biotechnology and cultivation of GM crops.

Session – 11

Title: Global warming and its implications for Indian agriculture

Duration: Ninety minutes

Content:
- What is global warming / Climate change
- Causes of global warming
- Impact of global warming on agriculture and food security
- Role of individual, community and panchayath raj institutions in mitigating the adverse effects of global warming
- Carbon trading
**Objective:** The objective of the session is to acquaint the participants with global warming and its ill effects and also equip them with simple measures they can take for mitigating the adverse effects

**Methodology:** Lecture, PPT, Film show & interaction with the participants

**Performance Aids:** White board, marker pen & brown paper

**Expected outcome:** At the end of the session participants will understand the different facets of global warming and also simple initiatives they can take to mitigate the ill effects of global warming

**Session – 12**

**Title:** Role of Animal Husbandry in sustainable farming

**Duration:** ninety minutes

**Content:**
- Inter relationship between animals and plants (plant-animals-soil)
- Importance of livestock in rural economy
- Importance of native breeds
- Integrated livestock management for diversification of income source and alleviation of rural poverty

**Objective:** The objective of the session is to acquaint the participants with different livestock enterprises and their integration with farming systems.

**Methodology:** Lecture, PPT, Film show & interaction with the participants

**Performance Aids:** White board, marker pen & brown paper

**Expected outcome:** At the end of the session participants will understand the importance of livestock management in sustainable farming and alleviating rural poverty.

**Session – 13**

**Title:** Right to Information
**Duration:** Sixty minutes

**Content:** Salient features of Right to Information Act

**Objective:** The objective of the session is to acquaint the participants with salient features of RTI Act

**Methodology:** Lecture, interaction with the participants, PPT

**Performance Aids:** White board marker pen brown paper

**Expected outcome:** At the end of the session participants will understand the salient features of RTI Act and proactively comply with the requirements of the Act.

**Session – 15**

Title: Evaluation of the course and distribution of certificates

**Content:**
- Summative evaluation of the course
- Obtaining feedback from the participants for improving the effectiveness of the course
- Distribution of certificates

**Performance Aids:** Evaluation forms

**General Suggestions to the Resource Persons**

- Thorough preparation on the subject matter is a fundamental requirement. The speaker should gather relevant information from available literature, internet or case studies and effectively utilize them.
- The speaker should largely comply with the time frame allotted to him.
- The Resource Person should adhere to the framework of the session and avoid digression into other subjects.
- The handout or any other material for distribution to the participants should be made available well in advance.
- Activities meant for energizing or refreshing the participants should be utilized when required.
The session should provide for clarification of doubts entertained by the participants

The most important points of the session may be listed before concluding the session

Dissensions which may crop up during the session on debatable issues should be reconciled by the speaker in the light of facts

The speaker should provide references on the subject so that the participants can pursue the subject in greater depth

The speaker may plan for evaluation of the session

Reading Material

- Handout on the subject
- Films
- Case studies
- Compendium on the course