

805222

**FINAL REPORT OF KAU-FAO PROJECT**

**BUILDING GENDER INTEGRATED AGRICULTURAL  
CURRICULUM, CAPACITY AND RESOURCE MATERIALS**

**APRIL - NOVEMBER, 2002.**



*Prepared by*

**Centre for Studies on Gender Concerns in Agriculture  
KERALA AGRICULTURAL UNIVERSITY,  
VELLANIKKARA, KAU.P.O, THRISSUR-680656  
KERALA, INDIA**

**2004**

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630 KAU/BU

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Centre for Studies on Gender Concerns in Agriculture  
Kerala Agricultural University  
Vellanikkara, KAU.P.O, Thrissur-680656  
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*Funded by*

The Food and Agriculture Organization of the United Nations (FAO),  
ROAP, Bangkok

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## Kerala Agricultural University

**Prof. K.V. Peter**  
**Vice Chancellor**

**Vellanikkara**  
**15<sup>th</sup> November, 2002**

### Foreword

Farming is to be 'the nurturing and caring for the nature including the human kind'. In fact, woman was the first farmer to initiate the farming in the world and she still continues her contributions in the farming sector in multiple roles. But the invisibility and general reluctance to appreciate and account for the women's role in agriculture is still hampering agricultural development efforts to continue as male oriented. It is high time for the agricultural development systems to be gender sensitive so as to recognise and consider the presence, participation, problems, and needs of both women and men in agriculture.

The Food and Agriculture Organization (FAO) under United Nations, understanding the importance of gender issues in agriculture, has rightly conceived and initiated far sighted efforts of integrating needed gender perspective right from elementary and secondary agricultural education. The moulding of the present and future human resources involved in agricultural development to be responsive and responsible to social concerns like gender justice has to start right from the graduate level. The Kerala Agricultural University (KAU) with its pioneering position in bringing gender perspective in agricultural development is the premier institution to harmonise and test the idea of integrating gender into the curriculum of agricultural education.

The present effort of building a gender integrated agricultural curriculum was carried in a participatory mode involving all the relevant stakeholders, right from the top academicians to the students in the University. The process enabled to prepare and initiate the needed change and associated capacity building among the teaching faculty and the students. The Project Team headed by Dr. P. S. Geethakutty kept the endeavour open and transparent to consider and account both the positive and negative reactions of the various levels of stakeholders. The report details the hurdles and possibilities of such an initiative, and describes the leadership, resources and the dynamism needed on the part of any Agricultural University, to go for the process of engendering of agricultural education.

I wish this joint effort of FAO and KAU would serve its purpose in sensitizing academia in the matter of engendering agricultural education in a developing country like India. I compliment Dr. Revathi Balakrishnan of FAO for the thoughtful support. I also place on record the appreciation of the University to Ms. Mina Swaminathan, MSSRF, Chennai and Dr. K. N. Shyamasundaran Nair, Former Vice Chancellor for the guidance and efforts made.

  
K. V. Peter

## Acknowledgement

*One of the set goals of Kerala Agricultural University (KAU) in initiating the Centre for Studies on Gender Concerns in Agriculture (CSGCA) during 1999 was to bring in gender perspectives in agricultural development through agricultural education. Hence the offer of collaboration and support for the CSGCA developing this 'Pilot approach for engendering agricultural education in India' by Regional Office Asia Pacific (ROAP) Bangkok of the Food and Agriculture Organisation (FAO). The support was very critical and opportune as it triggered the efforts of KAU to reinforce the goal of moulding gender sensitive personnel for agricultural development. The KAU is greatly indebted to the FAO, especially Dr. Revathi Balakrishnan, Rural Sociologist and Women Development Officer of FAO Bangkok for the support and technical guidance provided throughout the project. Indeed the timely and critical support enabled the Centre to get counted as an initiative committed to the cause of gender justice in agriculture.*

*Ms. Mina Swaminathan, Director, Gendeavour, M.S.Swaminathan Research Foundation has been a major source of inspiration and true guide to us right from the initiation of the project. She has been kind enough to interact with and convince the administrators, scientists and students members of the University in various occasions about the need of gender sensitivity in agricultural development. We are indebted to MSSRF for the capability KAU could develop through the association.*

*Dr. K.N.Shyamsundaran Nair, Formerly Vice Chancellor, KAU has in fact served as the mentor and philosopher of this challenging project. It is to be placed on record that the vision he had kindled in the KAU community while setting up the CSGCA during his tenure as Vice Chancellor, KAU continues to be the main guiding force us in this endeavour. The valuable technical direction in the design and preparation of the present project report are greatly appreciated and our sincere gratitude is expressed here.*

*Dr. Katyal, Deputy Director General (education), ICAR has been kind enough to serve as the Chairperson of the Brainstorming Session of the Deans and Directors of KAU held during the project and enabled to convince the decision making bodies in the University about the relevance of the engendering efforts in agricultural education. We are much obliged to the guidance received from him.*

*Professor K.V.Peter, Vice Chancellor KAU, not only as Head of the University through timely decisions and directions, but as a Scientist who is convinced in the philosophy and approach of the*

*project itself has provided all back-up support needed in its implementation. Sincere gratitude to the Vice Chancellor is placed on here.*

*The Directors of Research, Academic, and Extension, and all Deans and Associate Deans were always co-operative and helpful to the project team in taking up this novel project covering all the college campuses of the University. My sincere thanks are recorded here.*

*All Scientists, and Students of the different faculties and disciplines of the University who participated in the several consultations, workshops and discussions held were the real resource, which enriched the process and product of the project. Thank you all.*

*The Members of the project team - Dr. K.S.Purushan, Dr.P.Rajendran, Dr. R.M.Prasad, Dr. P.A. Nazeem, Dr. George Thomas, Dr. M.R.Subhadra, Dr. N.K.Vimalakumari, Dr.S. Shyamakumari, Dr. K.J.Joseph, and Dr.Jessy Thomas were actively involved in the deliberations and conduct of the process, without which the tasks set could not have been materialised. My sincere thanks to each one of them are expressed here.*

*The Research Associates of the CSGCA- Ms. Sreeja.V.S, Ms. Sheeja Karalam, Ms. Sreelatha, Ms. Suma Nair, and Mr. Pratheesh V.S. are acknowledged for the documentation support received from them in various phases of this initiative. My sincere thanks are placed.*



P. S. Geethakutty  
Associate Professor & Project Co-ordinator  
Centre for Studies on Gender Concerns in Agriculture

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### Building Gender Integrated Agricultural Curriculum, Capacity And Resource Materials

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- Funded by : Food and Agriculture Organization of United Nations (FAO), ROAP,  
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## Glossary of Terms

1. Agrl.	Agriculture
2. Agro.	Agronomy
3. Anhs.	Animal Husbandry
4. B.VSc.	Bachelor of Veterinary Science
5. BFSc	Bachelor of Fisheries Science
6. Biot.	Biotechnology
7. BSc (C & B)	Bachelor of Co-operation and Banking
8. DSc & Tech	Bachelor of Dairy Science and Technology
9. BSc Forestry	Bachelor of Science in Forestry
10. BSc(Ag.)	Bachelor of Science in Agriculture
11. BTech (Agrl.Engg.)	Bachelor of Agricultural Engineering
12. Chem.	Chemistry
13. Comp.	Computer Science
14. Crps.	Crop Physiology
15. CSGCA	Centre for Studies on Gender Concerns in Agriculture
16. Econ.	Economics
17. Engg.	Engineering
18. Ento.	Entomology
19. Extn.	Extension
20. FAO	Food and Agricultural Organisation
21. Ftrg.	Field Training
22. Hmsc.	Home Science
23. Hort.	Horticulture
24. ICAR	Indian Council of Agricultural Research
25. JFM	Joint Forest Management
26. KAU	Kerala Agricultural University
27. Metg.	Meteorology
28. MSSRF	M S Swaminathan Research Foundation
29. NRCWA	National Research Centre for Women in Agriculture
30. NRM	Natural Resource Management
31. NSS	National Service Scheme

32. Path.	Pathology
33. PG Programme	Post Graduate Programme
34. Phed.	Physical Education
35. Plbr.	Plant Breeding
36. RAWE	Rural Agricultural Work Experience
37. Stat.	Statistics
38. Stur.	Study Tour
39. UG Programme	Under Graduate Programme
40. WE	Work Experience

## LIST OF APPENDICES

1. The raison d'être (why) and the how of engendering UG curriculum in Agriculture- Thought paper by K.N.Shyamasundaran Nair and P.S.Geethakutty
2. Resource Persons and participants of the Consultation Workshop on "*Building Gender Integrated Agricultural Curriculum*" held on 10<sup>th</sup> and 11<sup>th</sup> May 2002
3. List of participants for the Brainstorming session on 'Revision and Engendering of UG Curriculum' in KAU held on 18<sup>th</sup> June 2002
4. List of participants of the college level discussions of KAU - FAO project on " Building Gender Integrated agricultural Curriculum, Capacity and Resource Materials" at different campuses under Kerala Agricultural University

## EXECUTIVE SUMMARY

The project “ **Building Gender Integrated Agricultural Curriculum, Resource Materials and Capacity**” implemented by the **Centre for Studies on Gender Concerns in Agriculture (CSGCA), Kerala Agricultural University(KAU)** in collaboration with the **FAO-ROAP**, during 2002 was a purposefully targeted effort of evolving a model approach for ‘**Engendering Agricultural Education In India**’.

The need and relevance of engendering agricultural education in India is strongly founded not only on the arguments of human rights and social justice, but also on the evidence of the substantial economic contribution of both women and men in agriculture. It is to be recognized that the agricultural development initiatives by, observing the status quo, remain predominantly male oriented and gender-insensitive. The situation demands concerted efforts of capacity building for gender responsive development initiatives in the system- for the present and future personnel research, technology development and transfer of technology to their target groups. This in turn necessitates the need of inculcating within the agricultural education system a culture and learning perspective that can promote gender responsive agricultural and rural development which in the long run will shape the national agenda of growth that ensures gender equity.

In appreciation of the leadership the KAU has gained through its efforts in understanding and analyzing gender concerns in agricultural development during the last few years, the FAO had selected the Kerala Agricultural University to design a preliminary study and propose a model approach for engendering agricultural education in India. The project implemented during April- November of 2002 had set the following specific objectives:

- Develop gender-integrated approaches in the curriculum of UG courses in KAU.
- Identify and develop supporting resource materials required for the gender responsive agricultural education.
- Capacity building of scientists for gender responsive teaching of agricultural courses.
- Develop a pilot programme approach for integration of gender dimensions in agricultural education

The Project Team through its participatory methods of group work, involving the different stake holders- deans, directors, academic officers, scientists, students, agricultural development personnel and gender experts in the scenario of agricultural education could

identify the following possibilities for integrating gender concerns in the agricultural curriculum.

- Introducing a two credit course (1+1) on Human Centered Agricultural Development for all Under Graduate (UG) Programmes.
- In relation to technologies or crop/animal/enterprise management- introduce the related dimensions of gender in different courses of the different disciplines.
- Introduce a separate module on gender sensitization in the course on field training, such as Rural Agricultural Work Experience (RAWE),
- Introduce elective courses on Gender Studies in Agriculture
- Include activities on gender issues and gender justice as part of student's community outreach programmes (village adoption/ National Service Scheme, etc.)
- Capacity building among scientists for gender responsive agricultural education and
- Develop the needed resource and reference materials.

Through the various processes of consultations, brainstorming sessions, workshops, opinion surveys, interactions, gender auditing of the existing syllabus etc, the first three possibilities of the initiative are elaborated..

- The relevant courses, areas of gender concerns to be integrated and methodologies of teaching in the existing syllabus of the BSc (Agriculture) Degree Programme are identified.
- The course content for the basic course to be introduced for all the UG courses in State Agricultural Universities (which is to be made locally/ regionally appropriate) is prepared
- A five day module of gender sensitization to be included in the RAWE programme of all UG courses is proposed.

The process of documentation of all the events in the execution of the project is furnished in detail with an improved action plan which can serve as a model for any other Agricultural University in initiating action towards **Engendering of Agricultural Education.**

# 1. BACKDROP OF THE PROJECT

## 1.1 Need and relevance of gender responsive agricultural education

Indian agriculture is characterised by farming systems wherein men and women perform mutually interdependent as well as independent roles right from production, processing, marketing and decision making as farmers, labour, and entrepreneurs. The extensive contribution by women in wide ranging tasks in production and processing in agriculture, influences household food security and determines national competitiveness in agro industry. Women constitute 80 percent of the workforce of agriculture in India and 86 percent of the rural women are working in agriculture. But historically dictated by social norms, family traditions and economic factors, participation of women and men in various farming contexts in India is gender specific and highly women discriminating. Women's work is also generally undervalued, invisible and unaccounted. Though, during the past few decades, the situation is slowly changing, the same is not reflected in the planned efforts of agriculture development, which remain predominantly male oriented and male dominated. Herein is the concern about the agricultural educational system, which overlooks the importance of addressing gender considerations in agriculture sector, and refuses in focusing on women as farmers and producers, to improve food security and competitiveness of agricultural products. Thus it is important to emphasize the necessity of inculcating within the agricultural educational system, a culture and learning perspective that promote gender considerations responsive to agricultural and rural development. Such an approach is expected to foster an enabling social and economic environment, which in the long run, can shape the national agenda of growth on the premises of gender equality.

In the last few decades, agricultural education system of India has demonstrated remarkable capacity in laying the scientific foundations for research and technology development in the agriculture sector. But, the current Indian realities of persisting inequalities manifested as rural poverty, and the feminization of agriculture, and the global trends and impact in agricultural production and trade demand that the human resource development should be broad based so as to address the ground level problems of rural

producers. To be responsive to current demands for human capital development, this poses a challenge to agricultural education system.

In order to build human capital base for sustained growth and alleviation of poverty and inequity, it is essential that all stakeholders in agricultural development, should refocus their perspective and commitment and redesign their approaches as well. In such a changing milieu, the State Agricultural University System (SAUS) based agriculture educators and learners should be enabled, to relearn and reconsider the realities of the rural situation, and national needs for human capital, and to refocus the priorities of development education. The architects of Indian agricultural development, are yet to recognize the prevalence of gender biases and gender imbalances, and yet to combine scientific knowledge of agriculture and rural production with socio-economic and gender concerns to overcome them. Hence, renovation of agriculture education in India, should focus on human capital development that provides equal importance to science and to human resources for production, by promoting gender inclusive approach that facilitate equal access to rural men and women for productive resources including technology, information and agriculture support services.

In this respect the Indian agricultural education system should be engendered to ensure human capital endowment for achieving sustainable economic and social development gains with gender equality. This far-reaching effort, to be accepted by the national system, demands a replicable model. Developing gender integrated course curriculum, as well as related supporting resource materials is a prerequisite. In the educational renovation context, agriculture sector should be viewed as an all encompassing umbrella of interrelated livelihood activities in the larger context of natural resource management, including cropping, animal rearing, fisheries, forestry, agro forestry and agro processing. Therefore, innovative revision of curriculum and reorientation of educational perspectives in agricultural education in India, should be designed with a gender responsive interdisciplinary framework. It should include in its scope all the farm courses offered at the first degree level in the present system of agricultural education-Agriculture, Animal Sciences, Dairy Sciences, Fisheries, Forestry, Agricultural Engineering and Home Science.

## **1.2. Current situation of gender and development in Indian agriculture**

The Indian Council of Agricultural Research (ICAR) as the national body with concurrent responsibilities for research, education, and extension education, has as its countrywide network, numerous research institutions and 35 State Agricultural Universities (SAUs) including deemed universities throughout the nation. It needs to be appreciated that ICAR in the near past has recognized the need of developing women friendly perspective in its programs of research and extension through the initiative of setting up a National Research Centre for Women in Agriculture (NRCWA), starting farm women oriented programs through Krishi Vigyan Kendras and launching Co-ordinated Research Projects on women related issues in agriculture. Quite recently, as part of its efforts in engendering agricultural research, the ICAR system has initiated efforts to mainstream gender concerns in the National Agricultural Technology Programs (NATP) also. Recognizing the importance of institutionalisation of gender dimensions in the opportunities of agricultural development, the Kerala Agricultural University (KAU), one among the SAUs supported by the ICAR, has undertaken pioneering initiatives on engendering agricultural curriculum.

## **1.3. Gender mainstreaming experiences of Kerala Agricultural University (1998-2002)**

The Kerala Agricultural University (KAU) is part of the 35 strong State Agricultural University System in the nation. The University is vested with the responsibilities of Research, Extension and Education in the scene of agricultural development for the state of Kerala. KAU has four main Faculties - Agriculture, Animal Husbandry, Fisheries and Agricultural Engineering and offers seven undergraduate courses- BSc in Agriculture, BVSc in Veterinary Science and Animal Husbandry, BSc in Forestry, BSc in Fisheries Science, BSc in Co-operation, Banking and Management, B. Tech. in Agricultural Engineering and B. Tech. in Dairy Science and Technology. There are three agricultural colleges under the Faculty of Agriculture - College of Agriculture, Vellayani, Thiruvananthapuram; College of Horticulture, Vellanikkara, Thrissur and College of Agriculture, Nileswaram, Kasaragode. There are separate Directorates to look after the three major functions of the University viz.- Education, Research and Extension. The academic matters are managed and monitored from the Directorate of Academics of the KAU. Spread out in the different campuses, the University has about 3000 students on its



rolls for various UG & PG programmes of which more than 65 percent are girls. Among the academic staff, more than 50 percent are female scientists. Under the Directorate of Research, which looks after the research functions, there are six Regional Agricultural Research Stations and 35 Research Stations spread out in the different parts of the state. The responsibilities of strengthening of extension and model extension programmes of the University for the state are vested with the Directorate of Extension.

The General Council, the supreme decision making body of the University, in 1998 recognizing the significant role of farm women in agriculture, took the decision to integrate gender perspective in its all efforts on research, extension and education. With this great vision of gender equity and justice in agricultural development, as part of University's planned efforts, the KAU initiated in 1999 the "Centre for Studies on Gender Concerns in Agriculture" (CSGCA). The CSGCA in collaboration with many other institutions committed to gender concerns - Ministry of Agriculture, Government of India, National Research Centre for Women in Agriculture (NRCWA), ICAR; M. S. Swaminathan Research Foundation (MSSRF), Chennai; State Women's Commission, Kerala etc has organised a series of workshops, consultations and similar capacity building programs for the University scientists, in order to sensitise them towards gender responsive teaching, research and extension efforts in agricultural development. Consultation and interactions with the students and capacity building on gender perspective among development personnel, are also part of the efforts being performed by the CSGCA towards building gender equity in agricultural development in the state. Several research projects and related development programs on analysing gender issues (stated in section 3.7.1) in agriculture are also in progress in the university as part of its gender mainstreaming efforts.

#### **1.4 Food & Agriculture Organisation (FAO) and engendering of agricultural education**

FAO regional programs provide technical assistance to accelerated advancement of rural women within the framework of FAO Gender and Development Plan of Action. FAO places emphasis in developing human resource in agriculture sector from two perspectives.

- a) evolving agriculture development professionals who would have sound knowledge of gender differentiated contribution to rural and farming system to develop policies and

programs to design gender equal access to productive resources in rural areas, and b) building capacities among rural women to expand their productive and welfare contribution to household food and livelihood security.

The FAO as part of its Gender Plan of Action for 2002- 2007 has recently started to invest in programs to build sustainable national capacities among young agricultural professionals to achieve long-term gender mainstreaming goals. It would have sustained impact in ensuring a stream of agricultural graduates who will leave the university with sound knowledge of gender concerns in agriculture; and equipped with expertise to develop, gender responsive policies, and programs, and to undertake supportive research addressing gender concerns. Hence, the starting point to develop the gender responsive agriculture professional cadre is to integrate gender considerations in agricultural curriculum and research.

In recognition of the experiences the KAU has already gained through its efforts in mainstreaming of gender in agricultural development, the FAO initiated in December 2001, a collaborative project with KAU to evolve an approach and model for engendering agricultural education in India. Hence the KAU undertook the present project "Building Gender Integrated Agricultural Curriculum, Capacity and Resource materials " during April- November 2002 with the support of FAO.

### **1.5 Objectives of the project**

1. Develop gender-integrated approaches in the Curriculum of UG courses in KAU,
2. Develop supporting resource materials required for the gender integrated farm courses of KAU,
3. Capacity building of scientists for gender responsive teaching of agricultural courses, and
4. Develop a pilot program approach for integration of gender dimensions in agricultural education.

## 2. METHODOLOGY

Participatory group work mode of implementation was adopted in the conduct of the project. The events included were- small group meetings, consultations, interaction sessions, brainstorming sessions, case studies and opinion surveys. The various levels of participants were – Students and Scientists, Directors, Deans, the Vice Chancellor of the University and Former Vice Chancellor of the University, the Deputy Director General (Education) of the Indian Council of Agricultural Research, and Gender Consultants.

The important events of the process are enlisted.

### 1. Project team and technical Advice

A multi- disciplinary Project Team consisting of nine Scientists drawn from different disciplines of the University was constituted under the leadership of Dr. P. S. Geethakutty, the Principal Investigator of the project and Co-ordinator of CSGCA. Dr. K. V. Peter, the Vice Chancellor, Ms. Mina Swaminathan, Director, Gendeavour, MSSRF, Chennai, Dr. K.N.Shyamasundarn Nair, Former Vice Chancellor, KAU and Dr. Revathi Balakrishnan, Regional Rural Sociologist & Women in Development Officer, FAO-RAP, Bangkok provided the professional backstopping including advice and guidance to the Project Team in the conduct of the project.

### 2. Preliminary discussion of the project team

The project team met on 2nd of May,2002 for preliminary interaction with the former Vice Chancellor in the chair on 2<sup>nd</sup> of May 2002. This sitting could set the action plan of the project and draft a theme paper on " The need and importance of engendering agricultural education".

### 3. Consultation of selected scientists

A consultation aimed at seeking the views and conviction of scientists of KAU towards building gender integrated agricultural curriculum was held on 10<sup>th</sup> and 11<sup>th</sup> of May 2002. This consultation helped to develop group thinking on the need and possibilities of engendering. It also helped to try the different possibilities of engendering and to find out the courses suitable for engendering.

4. **Brainstorming session of Deans and Directors on engendering of agricultural education**

The Brainstorming Session chaired by Dr. J.C. Katyal, DDG (Education), ICAR held on 18<sup>th</sup> June, 2002 presented the idea of engendering to the various Deans, Directors and Academic Officers of the University, and sought their points of view and co-operation in sensitising concerned scientists of the colleges and to secure their involvement.

5. **College level interactions**

In continuation of the Brainstorming session, college level discussions were held under the leadership of the concerned Deans / Associate Deans in all the nine college campuses of the University. The Project team presented in detail, the objectives, relevance and potential impact of the project to all scientists. Though responses received were mixed varying from apprehension, anxiety, passive attitude and support, it was decided to organise workshops on different campuses to orient further about the concept of gender - relevance in agriculture to the scientists and to make them identify the possibilities of integrating the gender issues and concerns into the relevant course syllabus.

6. **Scanning of the courses and identification of relevant courses for gender integration**

In order to work out a model of gender integration, the existing BSc (Ag) syllabus was scanned for gender integration by identifying the existing courses with focus on human and women component and potential courses of engendering based on the topics.

7. **Interaction sessions with the UG students and opinion surveys**

The Project Team could interact with the final year BSc (Ag) graduates of the Agricultural Colleges, and obtain their views on the need of making agricultural education more field-oriented, job- oriented and engendered. Opinion surveys were employed to collect information on how far the existing courses are providing opportunities for students to get exposure on the rural life, gender roles, issues, challenges and constraints and how far they are aware about the gender roles and gender concerns.

8. **Development of mandatory/ basic course on Human Perspective in Agriculture**  
Based on the deliberations with the Project Team and the various experts, the broad outline of the basic course on "Human- centred agricultural development perspective" was formulated.
9. **Review meeting of the Project**  
Mid term review meeting held on 5<sup>th</sup> October, 2002 assessed the progress of the project and suggested changes needed for attaining the objectives.
10. **Orientation Workshop for Scientists**  
Two workshop cum training sessions for scientists were conducted. The workshops enabled to orient the scientists on the concepts of gender in society, institutions, and agricultural development. During these workshops the participants tried to identify the possibilities of integrating gender into their own courses and disciplines.

### **3. EVENTS – OBSERVATIONS / RECOMMENDATIONS TOWARDS ENGENDERING OF AGRICULTURAL EDUCATION**

3.1.1. Preliminary Project Meeting on the relevance of gender analysis in the context of a development paradigm with focus on human and resource centred agricultural efforts for sustainable development conducted under the leadership of Dr. K. N. Shyamasundaran Nair, Former Vice Chancellor, KAU, could identify the need of harmonization of technology and social concerns for sustainable development. Answers to the following questions were sought in the meeting-

- Why are we imparting agricultural education to the students?
- What are the objectives of agricultural education?
- What do we expect from the agricultural graduates?
- What are we teaching the agricultural students?
- What learning opportunities/ rural realities the students are exposed to in the undergraduate classes?
- What is agricultural development?

While elaborating these, it was argued that a paradigm shift in agricultural development was needed for putting relevance of social concerns and emphasized the need for evolving a

human centered development with sustainability and social equity at the center stage. It was identified that justification for gender concerns is to be sought not just in terms of social concerns, but women in their own right as contributors to the farm/ agricultural economy.

For further buttressing the argument the participants were made to identify and analyze the different roles of human element (both men and women) in agriculture - physical involvement, decision-making, economic contributions of both men and women in agriculture.

3.1.2 The need for the agricultural development worker to be concerned about gender, equity – economic issues – value system in their profession was explained. It was argued that, agricultural graduates have to understand the importance of the roles of both men and women in the agricultural development as they are the personnel to provide technical support to agricultural development through - extension and TOT, support services, managerial support, generating agricultural technologies with research and development.

3.1.3 It was observed during the discussion that a paradigm shift in the present development approach of commodity oriented production towards resource and human resource centered one is essential. This inevitably should orient the students to the 'human face' behind the technologies. The courses should focus not only on the technologies but on those who are engaged on the farming activities; men and women in the different roles. Special emphasis should be given to identify the roles and contributions of women which usually are unaccounted and remain invisible. Special attention is needed to make students 'observe' that women are also equal partners along with men in agriculture.

3.1.4 It was also observed that this perspective genuinely demand experience/insight on rural realities. The general trend of only very low proportion of students with rural background getting enrolled for the farm courses also was pointed out. This in turn demands that focus to be given in developing gender sensitivity among the development personnel through capacity building for gender analysis in agriculture - the capacity to identify who does what and who gets what in the process?

3.1.5 The following approaches were suggested to make the future agricultural development personnel (present students) get exposed to these realities and also to realize the relevance of considering these issues in the development work, through their education

1. To expose the students to the various roles of women and men in agriculture and their specific needs and problems through the different courses (theory and practicals) of the UG programs.
2. To provide students the required orientation on the human perspective in sustainable agricultural development and on farming culture and rural background through a separate course on Human Perspective in Agricultural Development.
3. These ideas are to be brought to the thinking of all stakeholders from Vice Chancellors, down to Directors, Deans, Scientists (Teachers), and to the Students and their response and view points should be sought.
4. It was also suggested to include farmers and field level extension workers in these interactions.
5. In order to develop the necessary orientation and skill for gender responsive teaching, the concerned teachers should be oriented to the concepts, and trained in the approaches and related skills.

As part of the project the gender integration in relevant courses of BSc (Ag) will be tried on a pilot basis and then to be taken up in other UG courses in KAU.

## **3.2 Scientists consultation**

3.2.1 The Consultation of selected scientists of the KAU was organised to seek views and approaches on the efforts for engendering. The discussions were led by Ms. Mina Swaminathan, MSSRF, Dr. K. N. Shyamasundaran Nair, Former Vice Chancellor, KAU and Prof. K. V. Peter, Vice Chancellor, KAU. Recommendations of the scientist's consultation were to introduce a mandatory course on Gender Concerns in Agriculture as part of all the UG programmes of KAU. To begin with, such a course be initiated as elective or optional, in all the UG programmes.



**Initiation of the Project - Discussion between FAO and KAU**



- 3.2.2 The idea of integrating gender concerns in relevant courses of various disciplines instead of introducing a separate course was suggested .
- 3.2.3 The field training course, Rural Agricultural Work Experience(RAWE) was identified as an ideal platform by adding a new module of gender sensitization.
- 3.2.4 The need for gender training for the teachers and resource material development for gender sensitive teaching were pointed out.

### **3.3. Brainstorming sessions of Deans and Directors on engendering**

3.3.2 The Brainstorming Session of Deans and Directors of the four faculties of the University was chaired by the Deputy Director General of Education of ICAR. The deliberations in the sessions were largely in appreciation of the efforts of engendering in agriculture in general, and particularly on the various sectors of crop management, animal management ,fisheries, agricultural engineering, forestry, dairying, and rural banking .

3.3.2 The following alternatives were suggested by the meeting as approaches for engendering the agricultural education.

1. Introducing a 2 credit course (1+1) on Human Centred Agricultural Development wherein the gender perspective - its relevance, context, value systems, approaches – gender issues. Field exposure to be imparted (This should form part of all UG courses)
2. In relation to technologies or crop/animal management – introduce the related dimensions of gender issues – in different disciplines. (Agronomy, Animal management, Soil and Water conservation, Plant/ Animal Breeding, Extension, Economics, Processing, Farm Management, Farm Machines etc.)
3. Introduce a separate module on Gender Sensitization in the field training course on Rural Agricultural Work Experience (RAWE).
4. Introduce elective courses on ‘Gender Studies in Agriculture’ at UG or PG level.
5. Include activities on gender concerns and development as part of NSS.
6. Develop the needed course content/ resource materials for gender responsive education.
7. Train the scientists for gender responsive education in agriculture.
8. Conduct lecture series on social issues (one per semester on topics of relevance) with compulsory attendance, but no tests or quizzes.

### **3.4. College level discussions on engendering agricultural education**

3.4.1. Separate discussions were held in all the nine college campuses of the University to make the scientists aware of these above efforts and their relevance. Discussions and meetings were arranged under the leadership of Dean/Associate Deans wherein all the scientists of the colleges were requested to participate. The observations and recommendations of the discussions held in the various colleges are detailed below.

#### **FACULTY OF AGRICULTURE**

##### **3.4.2 College of Agriculture, Vellayani Thiruvananthapuram**

- Women do play significant roles in agriculture along with men; and often they do face various kinds of discriminations. Hence there are gender issues which are to be considered in agricultural development.
- Welcomed the relevance of introducing the students to agriculture and field realities in the beginning of course itself, through an introductory course.
- Indicated the difficulty of inclusion of a new course in the revised syllabus due to the problem of additional credit hours was indicated.
- Identifying and integrating the gender concerns in relevant courses of disciplines was accepted as an alternative. Introductory courses of all disciplines and other relevant courses are ideal for this integration effort.
- Recognised that scientists need orientation on the concepts of gender perspective in agriculture.
- Supporting resource materials are to be developed for the sessions on gender concerns.



**Brainstorming Session of Deans and Directors on Engendering  
Agricultural Curriculum**

- Orientation workshop of three days is to be organized during November, 2002 for a group of selected scientists.
- It was also suggested to circulate brief write up on concepts of gender, gender issues in agriculture and its relevance in agricultural research, extension and development among all the scientists.

#### 3.4.3. College of Agriculture, Padanakkad on 11<sup>th</sup> September, 2002

It was suggested to put in more efforts for sensitizing the scientists about the genuine concerns behind engendering of agricultural research, extension and education- specifically pointing out the differences and potentials of women involved in agriculture. The struggle often the project team is facing to overcome the preconceived notions and prejudiced arguments on gender sensitisation were also commented upon. It was then suggested to focus more on technology development for women performed activities, TOT (Transfer of Technologies) and empowerment of women. The proposal of organizing scientists workshop on engendering also was received well.

#### 3.4.4. College Horticulture, Vellanikkara, Thrissur

- There are gender issues in the field of agricultural development which as part of human justice are to be discussed in agricultural education.
- Most of the agricultural students lack exposure on rural situations and realities.
- It is acceptable to introduce a basic course on orienting the cultural background of agriculture together with gender concerns. But this is to be accepted and finalized through the concerned statutory academic bodies of the University such as the Board of Studies, and Academic Council of the University.

- There was the apprehension of the over-burdening of credit load of the present syllabus and lack of scope for adding a new course credit. Both the possibilities to replace any existing course and the courses to be replaced were examined.
- The approach for bringing gender concerns to the relevant courses/disciplines though was generally agreed to, the means by which it can be achieved has to be discussed further.
- It was decided that the relevant issues, pedagogies by which the issues can be taught (theory, practicals/ field visits/case studies, video spots) are to be finalised in the discussions with the concerned teachers for which a small group is to be identified. This group is to be oriented first on 'gender concepts' and then to work out the methodologies.

#### 3.4.5. College of Co-operation, Banking and Management, Vellanikkara, Thrissur

- The core course on the gender concerns can be included in the syllabus to sensitise the students.
- Some of these issues are already included in the existing BSc (CBM) degree course and now the task is to be put as more purposeful into the different courses.
- At the post graduate level the students are to be given optional courses on gender concerns in rural development.
- Equipping students with the orientation/skill to identify the natural resources, human resources, their roles and livelihood in any locality.
- Introduction of course on "Human Centered Agricultural Development" as part of the UG program.
- Gender issues can be taken up as co-curricular activities (village adoption programs, NSS programs, cultural programs etc.)



**Students Discuss about Engendering Agricultural Curriculum**

- Village stay programs of the RAWE program is to be appropriated with gender sensitization.
- Programs for solving gender issues in the college among female staff/ girls are to be taken up.
- Authorities are to be requested to reintroduce the program of two wheeler driving skill training to the girl students in KAU
- The need of strengthening the activities of women complaint cell in the college also was pointed out.

#### 3.4.6. College of Forestry, Vellanikkara, Thrissur

The discussion helped to identify the need of orienting the graduates in forestry to the ground realities of the rural areas. Some of the members in the group expressed their experiences with women in wasteland development, afforestation programs and supported the present effort of engendering.

- Inclusion of one basic course on Human Centered Agricultural Development in which the graduates can be exposed to gender concerns and concepts and human perspective. It was suggested to replace one of the existing extension education courses with the proposed one.
- Decided to formulate a core group of scientists to identify the relevant courses for gender integration.
- Provide orientation training to the scientists on gender concerns and

## FACULTY OF VETERINARY AND ANIMAL SCIENCES

### 3.4.7 College of Veterinary and Animal Sciences, Mannuthy

- Need of giving attention to women farmers and cattle growers (women rarely attend institutional training programs) was recognised and appreciated.
- Students should be made to visit and learn success cases of women managed livestock/poultry/dairy units to identify their specific needs.
- Heavy workload of teachers and difficulties of transportation to the villages were identified as associated problems of increasing the field practicals
- Need for developing women empowerment units/cases was recognised.
- Need for refresher courses of field extension officers on engendering was appreciated.
- The group in general supported the introduction of the course on 'Human Perspective in Agricultural Development' through the approval of the academic bodies.
- Relevant issues are to be dealt as part of the different courses in the UG course of B.V.Sc.
- Need of training a core group of teachers in concepts and approaches of gender and development in agriculture. It was decided to have the training in October 2002.

### 3.4.8. College of Dairy Science and Technology, Mannuthy on 7th August, 2002

- The group recognised that scientists in general should be oriented on the concepts, and tools of gender analysis and the related pedagogies.



- The course on “Human centered Agricultural Development” and integration of gender issues in relevant disciplines can be taken up with the approval of concerned academic bodies.
- Intensive training should be imparted to selected teachers who are expected to handle basic course on “Gender and Development and Gender analysis” .
- Student’s seminars on gender issues are to be organized.
- Issues such as lack of employment opportunities for women graduates of Dairy Science (in dairy plants etc.) and the changes needed in policies related to working hours, mobility, transportation facilities, social environment etc. are also to be tackled through these engendering efforts.
- Necessary action is to be taken to revive the two wheeler training program for girls in the University.

## **FACULTY OF FISHERIES**

### **3.4.9. College of Fisheries, Panangad**

- Most of the students are of urban orientation and without exposure to rural and fishing communities. Hence it is necessary to give real exposures to the students about the problems of fishing villages.
- Students are to be made to interact with the community so as to make them aware as to for whom they are being moulded (Who are their stakeholders and what are the services they are expected to provide).
- Pointed out the increasing roles of women in inland fishing, fish processing, value addition, vending, aquaculture, ornamental fishing, net making and capture fisheries.

- In general the group agreed for the introduction of the basic course on human perspective in agriculture.
- It was agreed to identify the relevant issues of gender concerns to be included in the relevant courses through a committee of scientists in the college.
- A large majority of scientists in the group felt the need for further exposure on the relevance and the need of engendering in fisheries development efforts.
- A sensitization and orientation workshop for the scientists in the college on engendering curriculum was also proposed.
- Students sessions are also to be organized to gather their views on these process.

## **FACULTY OF AGRICULTURAL ENGINEERING**

### **3.4.10. College of Agricultural Engineering, Tavanur**

- Despite the argument over feminism and its philosophy by some participants the group in general agreed with the need for orientation of agricultural engineering students on gender issues.
- Water harvesting and post harvest processing were identified as areas of gender concerns.
- The need of studying the negative gender impact of farm mechanization and the need for evolving women friendly (user friendly) technologies also were considered.
- It was felt that there is much difficulty to introduce the new course of human centered agriculture, as the syllabus has no space to accommodate any more credits.
- Students need more orientation on the roles of women through field exposure.

- Social sciences course (Agrl. Extension) is to be placed in the beginning of the UG program in third semester instead of placing it in the seventh semester. Problems of women are to be taken up as project work in UG programs.
- Efforts to appropriate the machines for the “users” should form an objective in students orientation. It was agreed to include the concepts of gender, gender issues and related topics in the existing syllabus.
- The group also felt the need for arranging an orientation workshop on the concept of gender and development in the campus.

**3.5 Interim Project Review Meeting** and the deliberations helped the team to take the following decisions.

- The proposed course "Human Centered Agricultural Development" may be structured as two courses (1 + 0 & 0+1). The first part of the course may be given in the first semester of all UG programs in KAU and it should focus on the needed human perspective component in agricultural development- introduction to agriculture - concept of gender - gender equity - related issues - approaches.
- The second course should be scheduled in the last but one semester (7th semester of the UG program). This should help the students to recapitulate the needed perspective, concepts and approaches along with the technologies in their development efforts. Alternatively this can be included as a separate module of the RAWE program in the final year.
- The deliberations, suggestion and decisions on the various college level discussions were reviewed. Considering the short span of the project period left out, it was decided to limit the number of Scientists' Workshops on Gender to all Colleges of Agriculture, as at present the gender integrated syllabus is being worked out only for BSc (Ag.).

- As continuation of efforts of the CSGCA, the workshops on Gender sensitisation in all other campuses of KAU should be organised. In addition to general orientation special intensive training programs also should be imparted to those scientists who are expected to handle the basic course on Human Perspectives in Development.
- Resource materials' production required for the suggested sessions on gender is an important component which could not be completed during the project and should be attempted in future before taking up the new syllabus in the University.
- The interaction and consultation with field level extension personnel and experts of farming culture and development etc also should be organised before the final decision on the introduction of the new syllabus in KAU.

### **3.6. Scientists' Workshops on Engendering Agricultural Education**

The Scientists' Workshops on Engendering Agricultural Education were organised in the College of Horticulture, Vellanikkara and College of Agriculture, Vellayani.

1. to impart the scientists of KAU, clarity on the concepts of gender in agricultural development and the need for engendering agricultural education
2. to get suggestions on gender integration into the relevant disciplines.

The module of the workshop program is given below

First Day

FN: Inauguration

Self introduction

Sharing of expectations

Objective setting

Group work - review of women and development in the history of Kerala (group reading) and discussion

AN: Gender in self and society through

Group work- Proverb analysis ( presentation)

Plotting ones own feminine and masculine attributes

Understanding gender in institutions

## Case study on possibilities of social institutions to solve gender issues

### Second Day

FN: Gender concept formation

Identification of family norms and gender differences-

Gender roles in farm families in different farming systems.

Need and relevance of engendering agricultural education

AN: Individual work to identify courses and areas of engendering

Presentation, Experience sharing and Discussion

### 3.6.1 Review and observations of the two Workshops

Even though both the workshops were effective there were lessons to be learnt, for future exercises. The major observations are

1. The methodology used in the workshop to analyse and understand the gender roles in the context of class, caste, varied situations, enterprise, type of farming systems etc. were ideal to transfer the skill of gender analysis to the participants.
2. The workshop's approaches to analyse the gender in self- society- family- and institutions were ideal to bring the conviction in new courses to understand the concept of gender and the relevance of its application.
3. It was also noticed in general that two day's duration is too short for this type of orientation workshop. At least four day's duration is essential so that a module wherein all these changes needed or the demerits could be taken care of for future workshops of this kind.

Equal importance should be given to the sessions of understanding gender in self and also its applications to analyse in the context of farming systems

### 3.7 Gender Audit of the BSc (Ag.) syllabus

The auditing of the existing BSc (Ag) syllabus of KAU for gender sensitivity was carried out through the following steps - Identifying and deciding the gender concerns in agricultural development in Kerala,, screening of the courses of BSc(Ag).with special focus on "women", Interaction and opinion survey among students and gender analysis of the courses.

### 3.7.1 The gender concerns in agricultural development in Kerala

The gender roles, the division of labour, the essential value of labour, issues of unequal resource and benefits availability the gender relations of power and related issues existing were considered. The following topics were identified as of importance in bringing out the existing inequalities in the power relations of men and women in agriculture which in turn directly and indirectly affect their involvement and contributions in the farming scene .

1. Multiple roles and work load of farm women.
2. Unaccountability of farm women's income contribution (productive and reproductive)
3. Invisibility and non- inclusion of farmwomen in planned efforts for development.
4. Participation and decision making roles of women and men.
5. Unaccountability family labour and farm family income.
6. Agricultural labour and wage discriminations.
7. Women labour- employment -insecurities and issues.
8. Women specific farm operations- drudgery, strain, back breaking postures- ergonomics- occupational health hazards- work efficiency- energy consumption.
9. Farm technologies- gender insensitivity- male oriented machines- gender impact.
10. Gender insensitivity of institutions- family- education- community/ society- religion- media- property rights.
11. Gender insensitive development personnel -agencies- institutions markets, societies, policies- approaches- causes-evaluation-budget-finance-ownership rights.
12. Non-targeted development plans-projects - Technology development.
13. Women and un reached-development programs/ TOT programs,Non- participatory extension methods.
14. Inaccessible farm resources- farm inputs among farm women.
15. Ownership rights- land- entitlement- and farmers rights on resources
16. Food security- nutritional deficiency- occupational health hazards and women.
17. Pesticide environmental pollution- gender impact.



**Scientists' Workshop on  
Engendering Agricultural Curriculum**



**College level Discussion on Engendering  
Agricultural Curriculum**



18. Disappearing/shrinking common property resources- forest- water-fuel-fodder- as problems of women.

### 3.7.2 Screening of the courses with special focus on "women"

A critical review of the entire syllabus and course outline was carried out to identify courses wherein there is any mention or focus of "women" as such. Among the 90 courses only seven courses were found to have any mention of the word 'women'.

Sl.No.	Discipline	Title of the Course	Context
1.	Agri. Extension	Extension education and Rural Development	Women in agriculture and rural development
2.	Agri. Economics	Farm Management Economics	Farm management and natural resources, economics
3.	Agri. Economics	Farm Management Economics	Contribution of women in farm labour supply
4.	Agri. Economics	Agricultural Finance	Agricultural co-operatives finance and Banking management- women co-operatives
5.	Agri. Economics	Agricultural Marketing	Agricultural marketing- women role in agricultural produce marketing
6.	Home Science	Food & Nutrition	Dietary requirements of men and women, health problems of women, special physiological conditions.
7.	Field training	RAWE	Farm planning, Village stay etc



### 3.7.3 Opinion survey among students

The opinion survey conducted to identify the extent of field exposures the courses of BSc (Ag) provide to the students (with final year students) indicated the following:

1. The present curriculum provides exposure to the farmers and farmers fields only from the 3<sup>rd</sup> year of the BSc (Ag) program. Only five courses were identified as providing field exposure during the entire course program- The farm house survey and PRA exercises of the courses on (Program Planning) in the 4<sup>th</sup> year, Study tour of Pomology and Floriculture in 3<sup>rd</sup> year, Courses of Entomology and Pathology in 3<sup>rd</sup> year and the RAWE program in the last semester of the final year.
2. One quarter of the students perceived farmers as male; while three quarter could recognise farmers as both male and female. Nearly three fifth of the students consider the roles of women in agriculture as equal to men.
3. On seeking the understanding of the students about farm women it was seen that only close to three fifths of the students were able to identify the different categories as female farmer, women labour and farm family female member etc; One sixths identified female labour as farm women.
4. The students in general were of the opinion that multiple roles of women, wage discriminations, landed property rights, unequal accessibility etc are gender issues but never discussed in their courses. The issue of loss of employment opportunity is never discussed or brought to their exposure in classes.
5. The points of interventions for introducing discussions on gender issues in their opinion are the courses in Agricultural Extension, Agricultural Economics and RAWE. Students pointed out the need for detailed orientation on gender issues before their village stay and farm planning module so that they can give more focus on such issues in the field. It can also be as a separate module in RAWE or through theory or practical classes of extension courses.
6. Nearly four fifths of the students considered that a better understanding of gender issues can enrich their professional work.
7. On gender issues among agricultural students in KAU, the girl students pointed out that the girl students have no say in decision making or they are never in major leadership positions.



**Consultation on Engendering Agricultural Curriculum**

8. Even though more than 70 per cent of the students is girls, only the positions of Vice Presidents and Joint Secretaries are earmarked for girl student in the Students Union.

- All class representatives are always boys; even if there is a girl representative she won't be included for decision making process; no responsibility is assigned to the girl representatives .
- Girl student representative's opinions are rarely sought in decision-making; Decisions are passed on to the girls just for compliance.
- Girls students face mobility problems.

#### 3.7.4. Interaction with students

Two interaction sessions with the BSc (Ag) students (one at the College of Horticulture, Vellanikkara and the other at the College of Agriculture, Padanakkad) were organised as part of the project. The major conclusions were the following

1. The students indicated the general difficulty they face in the program through the non-connected handling of various aspects of the same crop in different semesters (in different years), instead of giving holistic coverage of theory and practicals in a continuous period.
2. The students indicated the extent of field exposure they get out of the four years of education is low. They suggested that field visits should be part of all courses, and not only that of RAWE program. Field visits help them to understand the realities and needs of the farmers and field practical sessions of Plant Protection courses should be made compulsory along with agro clinics from the third year onwards.
3. The duration of RAWE programs should be increased (at present it is 5<sup>1/2</sup> months). Not only at the end but also at the beginning of the BSc (Ag) program field orientation sessions like RAWE should be introduced.
4. From the very beginning of the course the students should get exposure to farm families in the villages in the neighbourhood of the college- so that they can identify their future customers and their specific needs.
5. Watershed management aspects should be covered in depth and holistically as an interdisciplinary approach.

### 3.7.5 Dimensions to be considered in Gender analysis of the courses

A detailed gender analysis of all the 90 courses in the syllabus was carried out to identify relevant courses for gender integration. While scanning each course, the content of the course was checked for relevance to the following dimensions.

1. Gender roles- whether content of the course is related to any physical or decision making activities in farming by women and men.
2. Access and control of the resource and benefit
  - Whether the content of the course is related to the availability or use of farm inputs/ resources (land- labour- capital- water- tools- energy- seed- fertiliser- pesticides- technology- information- media)
  - income from farm produce (yield- profit- food- recognition- award)
  - institution- infrastructure- service( agricultural information- training skills- subsidy- credit- insurance- banks- co-operatives- societies- market- transportation- tools)
3. Constraints/ problems/ situations in need of improvements/ gender impact/ gender issue
  - no technology/ technological incompatibility/ income generation/ income availability/ wage discrimination/ food security/ occupational health hazards/ employment potential /loss etc.

The review of the syllabus using the above indicators could help to identify 66 courses in the BSc (Ag) syllabus as relevant for gender integration.

### 3.8 Gender Integrated B. Sc. (Ag) Syllabus

#### 3.8.1. List of courses in the BSc (Ag) syllabus of KAU

(Courses identified for integrating gender concerns are given in bold letters and italicised)

#### 1. Horticulture

<b><i>Hort.101 Fundamentals of Horticulture</i></b>	<b><i>1+1</i></b>
<b><i>Hort.102 Plantation crops</i></b>	<b><i>2+1</i></b>
<b><i>Hort.203 Fruits crops</i></b>	<b><i>2+1</i></b>
<b><i>Hort.204 Vegetable crops</i></b>	<b><i>2+1</i></b>
<b><i>Hort.305 Spices</i></b>	<b><i>1+1</i></b>
<b><i>Hort.306 Medicinal &amp; Aromatic plants</i></b>	<b><i>1+0</i></b>
<b><i>Hort.307 Post harvest handling &amp; processing of hortl. crops</i></b>	<b><i>2+1</i></b>

## 2. Agronomy

Agro.	101	<i>Principles of Agronomy</i>	1+0
Agro.	102	<i>Soil Productivity and Management</i>	1+1
Agro.	103	<i>Soil and water conservation</i>	1+0
Agro.	104	<i>Principles of Weed Management</i>	1+1
Agro.	205	<i>Water Management</i>	1+1
Agro.	206	<i>Crop production I (Cereals &amp; millets)</i>	1+1
Agro.	207	<i>Crop production II (Pulses, oilseeds, green manures)</i>	1+1
Agro.	308	<i>Crop production III (Sugar &amp; Tuber crops)</i>	1+1
Agro.	309	<i>Crop production IV (Fibre, Narcotics, forage/ pastures)</i>	1+1
Agro.	410	<i>Cropping pattern &amp; farming systems</i>	1+0

## 3. Soil Science &amp; Agricultural Chemistry

Chem.	101	Physical Chemistry and bio physics	1+0
Chem.	102	Analytical Chemistry	0+1
Chem.	103	Agricultural Biochemistry	2+1
Chem.	204	Basic Soil Science	2+1
Chem.	205	Soil fertility soil plant relationship and soil biology	2+1
Chem.	306	<i>Manures &amp; Fertilisers</i>	1+1
Chem.	307	<i>Agri. chemicals and environmental pollution management</i>	1+1
Chem.	408	Chemistry of submerged & problem soils	1+0

## 4. Agricultural Entomology

Ento.	101	Fundamentals of entomology	1+1
Ento.	202	<i>Insect taxonomy &amp; beneficial organisms</i>	2+1
Ento.	203	<i>Ecology &amp; pest management</i>	2+1
Ento.	304	<i>Economic Entomology I</i>	2+1
Ento.	305	<i>Economic Entomology II</i>	1+1
Ento.	406	<i>Non insect pest and their management</i>	1+1

## 5. Plant Pathology

Path.	101	Microbiology I	2+1
Path.	102	Microbiology II	1+1
Path.	203	Principles of plant pathology	2+0
Path.	204	<i>Diseases of Field Crops, Vegetables and Ornamentals</i>	2+1
Path.	305	<i>Diseases of Plantation Crops</i>	2+1
Path.	306	<i>Diseases of fruit plants and post harvest technology</i>	1+1

## 6. Plant Breeding &amp; Genetics

Plbr.	101	Morphology and systematics of crop plants	1+1
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Plbr.	102	Anatomy, Embryology & Cytology	1+1
Plbr.	203	Principles of genetics	1+1
<i>Plbr.</i>	<i>204</i>	<i>Methods of Plant Breeding</i>	<i>2+1</i>
<i>Plbr.</i>	<i>305</i>	<i>Breeding of crops and seed certification</i>	<i>2+1</i>
<b>7. Agrl. Economics</b>			
<i>Econ.</i>	<i>101</i>	<i>Principles of economics</i>	<i>2+0</i>
<i>Econ.</i>	<i>102</i>	<i>Agricultural Finance</i>	<i>1+1</i>
<i>Econ.</i>	<i>203</i>	<i>Agrl. Marketing</i>	<i>1+1</i>
<i>Econ.</i>	<i>304</i>	<i>Farm Management economics</i>	<i>2+1</i>
<i>Econ.</i>	<i>305</i>	<i>Agri Business Management</i>	<i>1+0</i>
<b>8. Agrl. Extension</b>			
<i>Extn.</i>	<i>101</i>	<i>Rural Sociology</i>	<i>1+0</i>
<i>Extn.</i>	<i>102</i>	<i>Psychology and extension education</i>	<i>1+0</i>
<i>Extn.</i>	<i>203</i>	<i>Extension education and rural development</i>	<i>1+0</i>
<i>Extn.</i>	<i>304</i>	<i>Communication in Agriculture</i>	<i>1+0</i>
<i>Extn.</i>	<i>305</i>	<i>Extension methods and aids</i>	<i>1+1</i>
<i>Extn.</i>	<i>406</i>	<i>Programme Planning</i>	<i>1+1</i>
<i>Extn.</i>	<i>407</i>	<i>Agrl. Extension Management</i>	<i>1+1</i>
<b>9. Agrl. Engineering</b>			
<i>Engg.</i>	<i>101</i>	<i>Irrigation &amp; drainage engineering</i>	<i>1+1</i>
<i>Engg.</i>	<i>102</i>	<i>Agrl. Survey and Structure</i>	<i>1+0</i>
<i>Engg.</i>	<i>403</i>	<i>Farm power and machinery and field operation</i>	<i>2+1</i>
<b>10. Agrl. Statistics</b>			
<i>Stat.</i>	<i>101</i>	<i>Mathematics</i>	<i>1+0</i>
<i>Stat.</i>	<i>302</i>	<i>Statistical methods</i>	<i>1+1</i>
<i>Stat.</i>	<i>303</i>	<i>Design and analysis of experiments</i>	<i>1+1</i>
<b>11. Animal Husbandry</b>			
<i>Anhs.</i>	<i>301</i>	<i>Animal management and nutrition</i>	<i>1+1</i>
<i>Anhs.</i>	<i>302</i>	<i>Poultry, dairying and fisheries</i>	<i>1+1</i>
<b>12. Plant Physiology</b>			
<i>Crps.</i>	<i>201</i>	<i>Principles of crop physiology</i>	<i>2+1</i>
<i>Crps.</i>	<i>302</i>	<i>Growth and morphogenesis</i>	<i>1+0</i>
<b>13. Agrl. Meteorology</b>			
<i>Metg.</i>	<i>101</i>	<i>Agrl. Meteorology</i>	<i>1+1</i>

#### 14. Home Science

*Hmsc.* 101 *Foods and nutrition* 1+1

#### 15. Biotechnology

Biot. 201 Principles of Biotechnology 1+0

Biot. 302 Molecular Biology 1+0

#### 16. Computer Science

Comp. 101 Introduction to computer Applications 1+0

#### 17. Physical Education

Phed. 101 Physical Education I 0+1

Phed. 202 Physical Education II 0+1

#### 18. Work Experience

*WE Agro.* 201 *Rice* 0+2

*WE Agro.* 202 *Pulses* 0+1

*WE Agro.* 303 *Tapioca* 0+1

*WE Hort.* 101 *Tree crops* 0+1

*WE Hort.* 302 *Plant propagation & nursery management* 0+1

*WE Hort.* 303 *Medicinal and Aromatic Plants* 0+1

*WE Hort.* 304 *Annual Horticultural Crops* 0+1

*WE Chem.* 401 Soil testing 0+1

*WE Plpt.* 301 *Plant protection I* 0+1

*WE Plpt.* 402 *Plant protection II* 0+1

*WE Metg.* 101 *Agri. meteorology* 0+1

*WE Biot.* 201 *Biotechnology I* 0+1

*WE Biot.* 302 *Biotechnology II* 0+1

#### 19. Study tour

Stur. 201 Study tour I 0+1

Stur. 302 Study tour II 0+1

#### 20. Field training

*Ftrg.401 Field training - Rural Agricultural Work Experience Programme (RAWE) 0+8*

### 3.8.2. Courses identified for integration of gender concerns in B.Sc. (Ag.) syllabus (with suggested topics to be introduced)

Sl. No	Course No.	Course Title	Suggested topics for gender integration
<b>I. Horticulture</b>			
1	Hort.101.	Fundamentals of Horticulture and Plant Propagation (1+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Farmers field visits/ interactions to identify local management practices, roles of farmers and labourers (men and women) and their specific needs and problems in the management of the horticultural crops.</li> <li>Discussion on new avenues/ agro technology in horticulture as employment opportunities to rural women- case studies on women entrepreneurs- sharing of experiences</li> </ul>
2	Hort. 102	Plantation Crops (2+1) (Coconut, Arecanut, Oil Palm, Rubber, Cashew, Tea, Coffee and Cocoa)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Video show on Farm Practices performed by women and men in these crops' management and discussion on their specific constraints&amp; needs</li> <li>Cases/ video session and discussion on the occupational health hazards- pollution aspects- labour displacement, affected parties etc of coconut based industries - coconut husk processing - coir retting- coir manufacturing – gender impact etc.</li> <li>Gender role analysis of Coconut, arecanut and oil palm based farming systems.</li> </ul>
3	Hort.203	Fruit crops (2+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Identify the gender roles of farmers/ labourers/ entrepreneurs in homesteads/ commercial fruit growers and specific needs.- through discussion/ interviews/ case studies</li> </ul>
4	Hort 204	Vegetable Crops (2+1) (Warm and Cool Season Vegetables)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>Problems in vegetable cultivation- over dosage of pesticides- health hazards- and awareness needed. Importance of considering local / varietal Preferences of women- in varietal development.</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Household data collection to identify common types of vegetables</li> </ul>



			<p>used/ grown/ purchased and the roles of men and women (growers) their needs</p> <ul style="list-style-type: none"> <li>• Project work/ case studies on processes issues( land, tenancy, credits, market, transportation) and roles of men and women in commercial vegetable cultivation/ post harvest handling and marketing - identify marketing channels involved.</li> </ul>
5	Hort. 305	Spices (1+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Video/slide show and discussion on gender roles in crop management and roles of women/ post harvest processing of spices - needs of export quality- skill development /technology improvement/ employment for women – impact of WTO on the livelihoods of women.</li> </ul>
6	Hort. 306	Medicinal and Aromatic Plants (1+0)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>• Medicinal plants – Conservation, reliance and livelihood of ethnic communities and forest plants and their collection from forest - forest laws- community/ indigenous wisdom- IPR issues (field visit/ discussion/ guest lecture)</li> </ul>
7	Hort.307	Post harvest handling and processing of horticultural crops (2+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Interactions with farmers and identification of post harvest process activities- issues related-household level- knowledge of women and training needs.</li> <li>• Commercial processing of the crops - new products– issues related/ employment opportunities. Cases studies on agribusiness units on new avenues (coconut based products; oleoresin products etc)</li> </ul>
8	Hort. 408.	Landscaping and Ornamental Gardening (1+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Project work/ case studies on homesteads of different income groups to identify the common species of garden plants- methods of propagation/ buying- gender roles/ responsibilities of raising/ keeping gardens and specific needs</li> <li>• Group work to identify needs and problems of Florists/ institutional garden maintenance/ flower marketing/ - gender roles in the flower cultivation, and value addition/ festive/ cultural demands- scope of group employment for women SHG etc. (case studies/ project work)</li> </ul>

9	WE 101	Hort.	Tree Crops (0+1) (Fruit and Plantation Crops)	<i>Details</i> <ul style="list-style-type: none"> <li>• Project Work on Commercial nursery Units- Employment generation for women- cases of women entrepreneurs in Nursery-problems/ needs</li> <li>• Farm visits to study local practices of propagation in home gardens- roles and needs of men and women</li> </ul>
10	WE 302	Hort.	Plant propagation and Nursery Techniques (0+1)	<ul style="list-style-type: none"> <li>• Field visits to commercial nurseries and their feeding units to identify the gender roles, needs and report presentation.</li> </ul>
11	WE 303	Hort.	Medicinal and Aromatic Plants (0+1)	<ul style="list-style-type: none"> <li>• Farmers field visits to study locally grown medicinal plants/ needs/ uses/ propagation methods Medicinal plants- nursery- an avenue for women employment- case/ report/ experience sharing with entrepreneurs/ women groups. Scope/ impact of WTO on medicinal plants cultivation</li> </ul>
12	WE 304	Hort.	Annual Horticultural crops Processing of fruits and Vegetables (0+1)	<i>Theory</i> <ul style="list-style-type: none"> <li>• <i>Vegetables</i>- interact with with local vegetable farmers- identify species/ practices/ roles of men and women/cost of cultivation/needs- group discussion and experience sharing.</li> <li>• <i>Banana</i> - Project work on Banana farmers- to identify species/ practices/ roles of men and women/ needs/ problems- land – tenancy- credit- market- of homestead and commercial growers- processing and marketing activities.</li> <li>• <i>Processing of Horticultural Products</i> - Field data collection on Home scale/ commercial level vegetable- fruit processing activities and issues of Women SHG run units- employment and income – scaling up of products.</li> </ul>
<p><b>NOTE: Either in the concerned practical sessions of the course or its related Work Experience Courses the students can be provided with the exposures on local farm visits/ business units/ interaction / experience sharing in the classes etc.</b></p>				
<b>II Agronomy</b>				
1	Agro. 102		Soil productivity and management (1+1)	<i>Practical</i> <ul style="list-style-type: none"> <li>• Sessions to identify and discuss the local practices of fertilizer/ manure/ application (methods, quantity/ time/ brand/ manures/ green</li> </ul>

			manures) gender roles involved in collection/ preparation/ application- constraints improvements needed – employment – income etc. in technology
2	Agro. 103	Soil and Water Conservation (1+0)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>• Guest lecture Sessions to understand impact of unwise soil and water uses and practices- need for water harvesting/ recharging. Watershed management- site visit- identify roles and practices of local application – roles and contributions of local men and women in-the management of community resource management.</li> <li>• Field sessions -visit to and discussions on models of successful soil / water conservation- harvesting- practices - gender needs- roles/ non-involvement of women- issues- case study presentations</li> <li>• Need of local peoples' (men and women) involvement in watershed planning and management</li> </ul>
3	Agro. 104	Principles of Weed Control (1+1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>• Session to discuss on roles of men and women in weeding- (manual-chemical- biological)- issues of health hazards- environmental degradation involved</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Field session to collect details on manual weeding- chemical weeding- gender needs- issues- wage rate- labour loss- etc</li> </ul>
4	Agro. 205	Water Management (1 + 1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>• Watershed management - concept - human element- livelihood and local resources</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Project Work to understand local farmers' water management practices - modern water management devices- labour displacement/ skill / water users association access and control over water- gender issues- watershed management- availability of drinking water- work load of women. PRA for identifying (livelihood/ resource map) locally relevant watershed management practices and micro plans.</li> </ul>
5	Agro. 206	Crop Production I (Cereals and Millets)	<i>Theory</i>

		(1+1)	<ul style="list-style-type: none"> <li>• Video interactive sessions on gender roles of farmers and laborers in the different stages of crop production- impact of shift in cropping pattern- paddy land conversion, loss of employment - food security issues (focus group discussion/ case study presentation) – livelihood security issues of men and women in farming systems</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Interaction with farmers and laborers to identify their problems and needs in the changing scenario – agriculture in Kerala.</li> </ul>
6	Agro. 207	Crop Production II (Pulses-oilseeds-green manures-Cover crops (1+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Field sessions to identify the crop management practices/practices grown/ performed by different genders- their problems, needs, and improvements needed in technologies -interactions/ interviews/ discussions etc.- and their preferences in varietal improvement/ development (consumption and marketing separately) – time utilisation pattern of men and women in the farming system</li> </ul>
7	Agro. 308	Crop production III (1+1) (Sugar and tuber crops)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Interaction with Sugarcane farmer, to identify farm management practices and gender - roles/ needs involved. Employment opportunities through byproducts- value addition opportunities for men and women.</li> <li>• Field visits to identify locally grown tuber crops- ownership/ management by men/ women/ house consumption/ commercial needs marketing etc – role of women in the conservation of tuber crops.</li> </ul>
8	Agro. 309	Crop Production -IV (1+1) (Fibre, narcotics, forage crops and pastures)	<p>Guest lecture on-</p> <ul style="list-style-type: none"> <li>• Issue of loss of grazing areas- common property resources- pressure on forests- forest degradation and impact on gender roles in cattle management- issues of feed and fodder- head load workers- drudgery reduction- forest management laws.</li> <li>• Fibre products (banana, coir) – employment avenue – Impact of WTO and issues</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Focus group discussion –to identify the transition happened in</li> </ul>

			grazing practices cattle- fodder collection from forest and other common property resources – local species of fodder- issues due to degraded resources- awareness/ skill/ technologies to be upgraded. PRA sessions with community in general and women group separately to identify their priorities- regarding fuel- water- fodder etc
9	Agro. 410	Cropping Pattern and Farming System (1+0)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>Gender roles in various farming systems- Video sessions on the shift in cropping pattern (wetland field crops to commercial plantation crops)- impact on food security and gender impact - analysis-discussion – Time utilization of men and women - Access and control of resources among men and women.</li> </ul>
	Work Experience		
10	W.E.	(Agron 201) (Rice)                    0+2 W.E. (Agron 202) (Pulses)            0+1 W.E. (Agron 303) (Tapioca)          0+1	<p><i>Details</i></p> Interaction with rice farmers- detailed gender role analysis of rice farming cost of production and discussion-issues/ problems and needs (group discussion) – contribution of men and women.
<b>III. Soil Chemistry</b>			
1	Chem. 307	Agricultural Chemicals and Environmental pollution management (1+1)	<p>Guest lecture- on environmental and gender impact- of chemical pesticide &amp; residues pollution- analysis of issues related to food and environmental pollution- social issues and need of community action and resistance</p> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Discussion after video sessions/ case studies on Pesticide/ chemical residues and gender- impact and environmental degradation/ hazards- field visits/ debates.</li> </ul>
<b>IV. Agricultural Entomology</b>			
1	Ento.202	Insect Taxonomy and Beneficial Organisms (2+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Field level interaction- farmers of apiculture/ sericulture and wormiculture- agribusiness avenues- case studies and issues, gender roles and employment.</li> </ul>
2	Ento.203	Insect Ecology and Pest Management (2+1)	<p>Invited guest lecture and debate on Issues of pesticide hazards/ residue/ pollution- gender impact- case studies.</p> <p><i>Practical</i></p>

			<ul style="list-style-type: none"> <li>Field level/ focus group discussion- pesticide hazards/cases on the issues/ IPM practices- potential gender- awareness- and skill training among women- cases and experience sharing.</li> </ul>
3	Ento.305	Economic Entomology-II (1+1) (Pests of plantation crops, spices, stored products, forest trees and livestock)	<i>Practical</i> <ul style="list-style-type: none"> <li>Group work / contact session with farmers- Local/ household practices of storage pests- interaction with women – their indigenous knowledge- awareness and use of modern practices.</li> </ul>
	Work Experience Courses In Entomology and Plant Pathology		Field sessions - to conduct agroclinics with farmers - to gain first hand knowledge on management of field problems- identification- problem solving- confidence building. Identify needs of farm women - their extent of access on the skill and knowledge plant protection.
4	WE- Plpl.301	Plant Protection -I (0+1)	Field sessions- attachment to selected farm households/ to study plant protection practices among farmers- their preferences- and problems – extent of involvement of women and men.
<b>V. Plant Pathology</b>			
1	Path 101	Microbiology I (2+1) (Bacteriology, Soil Microbiology, Phycology and Virology)	Sessions on the economic importance/ employment potential of products - Blue Green algae- Mushrooms- rhizobium culture, coir pith compost etc / field visits to interact with entrepreneurs and to prepare project reports and experience sharing.
2	Path. 204	Diseases of field crops, vegetables and ornamentals (2+1)	<i>Practical</i> <ul style="list-style-type: none"> <li>Field sessions to identify involvement of women in plant protection operations- and identify their needs and issues and discuss- in the class.</li> </ul>
3	Work Experience	WE-Plpt.402 Plant Protection -II(0+1)	Inaccessibility of farmwomen to the farm inputs – of knowledge, pesticides, decision making - (discussion and identification of training needs among women farmers and the involvement of women in plant protection practices- training needs
<b>VI. Plant Breeding &amp; Genetics</b>			
1	Plbr. 204	Method of plant breeding (2+1)	Invited Guest lecture and interaction- Gender roles and importance biodiversity- conservation- indigenous knowledge of local farm women in seed selection-collection - conservation /propagation- rouging- seed production – employment and skill upgradation.

2	Plbr. 305	Breeding of crops and seed certification (2+1)	Invited sessions on Participatory Plant breeding- varietal preference decision making and roles of women in seed production <i>Practical</i> Identification of Ideal varietal characteristics of major crops- identification and interaction in the field- gender sensitive PRA method to include both men, women, farmers, labourers and other stake holders.
<b>VII. Agricultural Economics</b>			
1	Econ. 101	Principles of Economics (2+0)	<i>Theory</i> <ul style="list-style-type: none"> <li>• Consumer behaviour- human wants- family income- family budget- expenditure</li> <li>• Differential gender contributions- income contributions- different needs –and access and control on income and benefits between men women, food security- availability- standard of living – (through group discussion of gender concepts and approaches)</li> <li>• Gender discrimination and differential access and control of Factors of production- land, land holding pattern availability of land, labour, credit, insurance, subsidy, water, market issues of these production factors- group discussion/ case studies/ invited lectures</li> <li>• Labour displacement-modernised farm mechanisation- wage discrimination, labour efficiency (through gender analysis exercises in different farming systems/ cases.)</li> </ul>
2	Econ. 102	Agricultural Finance (1+1)	<i>Theory</i> <ul style="list-style-type: none"> <li>• Gender issues of access of Credit- collateral security- land right issues- recent changes flexibility of banking rules- micro credits and SHGs women empowerment.</li> <li>• Role of Co-operatives- gender equity of membership and participation- representation in decision-making bodies- (Guest lectures/ Group discussion in these issues).</li> </ul> <i>Practical</i> <ul style="list-style-type: none"> <li>• Project report on different types farmer organizations/ Local Co-operative societies- Milk marketing societies gender sensitivity- gender disaggregated data on membership/ credit utilization, terms and conditions/ Board – male- female ratio, Meetings- participation</li> </ul>

			of both men and women, nature of activities/ decisions involved etc.
3	Econ. 203	Agricultural Marketing (1+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Marketing- gender discriminations- institutions involved/ information- inaccessibility of market - to women- changes- Marketing channels involved- crops/ products marketed/ sold by women- cash flow in agribusiness- milk marketing societies- decision makers- video show/ cases and group discussions. Need of marketing co-operatives.</li> </ul>
4	Econ.304	Farm Management Economics (2+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Farm visits- farm resource appraisal- livelihood analysis- time utilization of men and women (family members) income contribution. Extent of resource availability-(access and control on resource and benefits among women and men- alternate plan preparation- recognition of family unpaid labour- comparison of men headed and women headed farmers. PRA methods and gender impact analysis.</li> </ul>
5	5Econ. 405	Agri. Business Management (1+0)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>Study on agribusiness units- women as entrepreneurs- potential areas- cases and discussions.</li> </ul>
<b>VIII. Agricultural Extension</b>			
1	Extn. 101	Rural Sociology (1+0)	<p>Theory and group exercise Sessions on-</p> <p>Gender as a Socio cultural construct, Gender in self and institutions- socialisation</p> <p>Gender role- expectations- performance (field study)</p> <p>Engendering process through filters of institutions and reinforcing functions of establishments (case studies)</p> <p>Farming and gender roles- discriminations in access and control over resources and benefits in the production systems</p>



			<p>Multiple roles of women- changing gender roles- impact of farm modernisation- (field survey and discussions)</p> <p>Human right for gender equity and justice- social justice</p> <p>Leadership- gender discrimination- emerging roles of women in community management- Panchayati raj etc.</p>
2	Extn. 102	Psychology and Extension Education (1+0)	<p>Theory/ Group exercise sessions for understanding - Gender sensitisation-need for individual development and career life / academic/ administrative/ development levels</p> <p>Organisational climate- gender in- self perception and others</p> <p>Expression / suppression of femininity and masculinity- factors- confidence- women empowerment</p>
3	Extn. 203	Extension Education and Rural Development (1+0)	<p>Interactive sessions on Gender and development/ women development approaches</p> <p>Needed gender sensitivity in extension approaches</p> <p>Development and social justice- Gender perspective in technology development</p> <p>Roles of women in agriculture- women friendly technologies</p> <p>Mindset for Development human centered paradigm</p> <p>Field- PRA- to identify separate needs(strategic/ practical) needs of male and female</p>
4	Extn. 304	Communication in Agriculture (1 +0)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>• Focus group discussion to identify channels of communication among farmers and identify channels which reach women farmers and their constraints in access to information.</li> <li>• Distance education- information communication technologies- to</li> </ul>

			<ul style="list-style-type: none"> <li>reach farm women and for farm women.</li> <li>Decision making roles of men and women- in family and communities- communication and space allowed- gender discriminations ( group work/ case study and discussion).</li> </ul>
5	Extn. 305	Extension Method and Aids (1+1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>Sessions on issues of information - communication- problems- to reach farm women- special methods/ attention to reach women.</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Gender specific PRA tools- identify and meet the needs of farm women</li> <li>Identification of good methods to reach farmers through practice/ observations in village.</li> </ul>
6	Extn. 406	Programme Planning (1+1)	<p><i>Practical Sessions on</i></p> <ul style="list-style-type: none"> <li>Gender sensitive design and implementation of development programs- participatory prioritisation</li> <li>Gender disaggregated data collection- inclusion of women's preferences and priorities, problems, needs,</li> <li>Gender impact indicators for appraisal, evaluation and monitoring and budgeting of plan</li> <li>Participation of farmwomen also in decision making, implementation and evaluation through case studies/ group discussions.</li> </ul>
7	Extn: 407	Agrl. Extension Management (1+1)	<p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Gender sensitivity in selecting extension approaches / programmes.</li> <li>Gender issues, needs, problems of men and women in development</li> <li>Gender sensitivity needed in Organisational climate and goals - constraints of field staff.</li> <li>Capacity development programs and approaches for gender sensitivity.</li> </ul>
<b>IX. Agricultural Engineering</b>			
1	Engg. 101	Irrigation and Drainage Engineering (1+1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>Gender roles in farm operations- farm women's' role and problems-</li> </ul>

			<p>need to consider the drudgery efficiency, ergonomics of “user” while designing the machines- case study and discussion gender justice- farm mechanization (Rice Transplanter)</p> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Field- data collection farmers and adoption farm machines- technologies- modification appropriate to men and women as user friendly- project work identify areas / technologies in need of mechanization</li> </ul>
2	Engg. 403	Farm Power & Machinery and Field Operation (2+1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>Need of gender sensitivity among technologists in designing user friendly machines</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Gender Analysis to identify farm operations and technologies needed – existing and potential farm machines</li> <li>Group Discussion/ field survey for identification, use and preference- of machines developed for major farm operations.</li> <li>Identify the gender needs through discussions.</li> </ul>
<b>X. Agricultural Statistics</b>			
1	Stat. 302	Statistical Methods (1+1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>Importance of developing gender disaggregated data- care needed in data collection- analysis, interpretation for gender specific information.</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Cases- exercises on technique on preparing gender disaggregated data</li> </ul>
<b>XI. Animal Husbandry</b>			
1	Anhs. 301	Animal Management, Nutrition and healthcare (1+1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>Importance of the role of women in live stock management/ special emphasis to be given in rural development approaches, programmes, and transfer of technology and training programmes</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>Case study- Gender analysis of live stock farming- small unit-</li> </ul>

			commercial dairy- problems of access and control resources- benefits among men and women – visits to Milk Marketing Co-operatives.
2	Anhs. 302	Poultry, Dairying and Fisheries (1+1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>• Case/ video sessions on discussion on gender roles of involvement of men and women in the dairying process- needs and constraint</li> <li>• Role of women and men- gender issues fisheries sectors, Field sessions to gender analysis of poultry, dairy and aqua culture- inland fishing</li> </ul> <p><i>Practical</i></p> <ul style="list-style-type: none"> <li>• Gender analysis to study roles involved in aqua culture-agriculture - fish- agribusinesses through case studies and discussion.</li> </ul>
<b>XII. Agricultural Meteorology</b>			
1	Metg. 101	Agricultural Meteorology (1+1)	<p><i>Theory</i></p> <ul style="list-style-type: none"> <li>• Use of access, availability meteorological information- among men and women farmer- case studies- Local Indigenous Knowledge on meteorological observations - among farm women and men to be collected and discussed.</li> </ul>
<b>XIII. Home Science</b>			
1	Hmsc. 101	Foods and Nutrition (1+1)	<p>Theory and group discussions to identify</p> <ul style="list-style-type: none"> <li>• Gender issues of food security- food availability intra household- community, food security- access of drinking water and food - Items of food baskets- food crops- Food distribution in the family- availability- women- Nutritional insecurity - differences among lower class women-cases and discussions – gender disaggregated data on deficiency and malnutrition</li> <li>• Household survey- food habits- food consumption - differential food availability among household members gender discrimination- group discussion and discussions</li> </ul>
<b>XIV. Biotechnology</b>			
1	Biot. 201	Principles of Biotechnology (1+0)	<ul style="list-style-type: none"> <li>• Study/ project work in private firms on biotechnology- gender roles involved- group discussions.</li> </ul>
2	Biot. 302	Molecular Biology (1+0)	

3	WE Biot. 302	Biotechnology II (0+1)	<p>involved- group discussions.</p> <ul style="list-style-type: none"> <li>Group Discussion on biotechnology as women friendly agribusiness- field level problems among women-Visit to biotechnology units/ women entrepreneurs - analysis – project presentations and identification of problems.</li> </ul>
<b>XV. Ftrg. 401. Field Training</b>			
Rural Agricultural Work Experience (RAWE)			
Suggestions for integrating gender in the various modules of RAWE			
1		Farm Planning and Watershed Management Analysis	<p>Farm inventory to be done in joint consultation with male and female members of the family.</p> <p>Activities and assets of the family to be analyzed in terms of male and female access and control.</p> <p>Activities and technologies being practised in the farm should be collected as gender disaggregated</p> <p>Constraints / needs of men and women should be assessed separately (livelihood analysis / resource / service utilization maps etc. could be utilized.)</p>
2		Village Stay Program and Panchayat Level Analysis	<p>Special emphasis to analyse the gender roles and occupations of women and men (all categories) in farming in the village are to be collected from farmers focus group discussion</p> <p>Through oral history, the livelihood opportunities of men and women to be traced back- to analyse the shift happened – gender impact.</p> <p>Identify development projects with gender sensitivity</p>

3		Agro-Clinic	<p>Observe and analyse how many women farmers participate/ avail the services of the agroclinic.</p> <p>Conduct a small survey among women farmers to identify their knowledge on plant protection measures and their constraints in the participation of TOT programs.</p>
4		Non Governmental Organisations (NGO's)	<p>Identify the objectives of the NGO and check the targeting on gender issues.</p> <p>Identify programs targeted to solve gender issues- and prepare case studies on the same and discuss.</p>
5		Training in the Krishi Bhavan	<p>Identify percentage of different categories of farmwomen in the panchayath and programs focused on them from the Krishi Bhavan.</p> <p>Identify the extent of participation of women in different Panchayath / Krishi Bhavan activities- (Leadership- decision making / development programs)</p> <p>Keep the gender sensitivity component as a criterion for the project formulation</p>
6		Entrepreneurship Development Program (EDP)	<p>Exposure on women friendly agribusiness avenues and project work as successful agribusiness units of women management</p> <p>Identify specific problems of women entrepreneurs in agribusiness.</p>
7		Training in Research Stations	<p>Identify the focus / problems / issues of gender identified / targeted by the scientists in the area of technology development / appropriation and transfer of technology</p> <p>Identify the extent of gender sensitivity kept in the on going research projects of the station.</p>
8		Training in KVK	<p>Identify the focus / problems / issues of gender identified / targeted by the scientists in the area of technology development / appropriation and transfer of technology</p> <p>Identify the extent of gender sensitivity kept in the on going training programmes of the station.</p>

### **3.9 Proposed Module for Gender Sensitisation during RAWE Programme**

**Duration** : Five days

I day: Identification of Gender in the self (Individual and Group exercises)

Identification of gender in the social Institutions- family- religion-media establishments (Group exercises and Discussions)

II day: Identification of Gender in development contexts (Case studies)

Identification of Gender in farming activities (Group work and Case studies)

III day: Field practices of gender sensitive tools/ and of PRA for gender analysis of different farming situations and Institutions. (Group work)

IV day : Needed Gender sensitivity in Agricultural Development plans, programs and development. (Guest Lectures)

V day : Formulating Gender Sensitive Development interventions.(Project work)

### **3.10 Proposed content of basic course on HUMAN CENTERED DEVELOPMENT IN AGRICULTURE (1+1) (Human Environment of Agricultural Development)**

1. Agriculture and culture- Subsistence and livelihood- stakeholders (Guest lectures)
2. Sustainable agriculture- concept – dimensions- paradigm of sustainable development
3. Major types of farming systems (Visit to field and identification of the features and gender roles)
4. Biophysical/ natural Resources and human resources in Agrl. Development
5. Transition in agriculture/farming ( Case studies- discussion)
6. Traditional Farming wisdom- indigenous knowledge/ wisdom (video session/ interaction with villagers)
7. Modern trends and technologies (Theory)
8. Institutions of Agrl. development in the Panchayath
9. Relevance of human component and social justice in development interventions-
10. Social values, equity and ethics of development (case studies- discussions and debate)
11. Human rights and gender justice- Gender concept formulation (games/ analysis)
12. Gender relations approach – and relevance agrl. development- Gender roles - in farming systems.
13. Social institutions and engendering- family- education- religion- media-establishment ( games/ case studies)
14. Gender analysis of agricultural development- approaches, frameworks (field practical)

15. Gender roles of men and women in farming ( group work in field and discussion)
16. Gender specific needs, constraints/ problems of men and women in agriculture (Theory and PRA Methods)
17. Gender impact of development interventions and gender discriminations (Case studies and discussions)
18. Gender perspective and gender sensitivity in agricultural development (Theory)
19. Major gender issues of Agrl. Scene (Group Discussion and reports)

#### **4. ENGENDERING OF AGRICULTURAL EDUCATION - KAU MODEL APPROACH**

Based on the experience KAU has gained in the process of implementing the project on "Building Gender Integrated Agricultural Curriculum, Capacity and Resource Materials" the following approaches are proposed for efforts of this kind in any SAUs in India.

##### **4.1 Pre- requisites for the process of engendering in agricultural education**

1. Full conviction about the need of engendering on the part of decision making body of the University, Vice Chancellor, Deans and Directors.
2. Support and motivation from the ICAR.( legitimisation procedure)
3. Convinced leadership and policy decision in support of gender responsive education.
4. Convinced and trained gender focal points- (scientists) of the university to effect the change.
5. Team of scientists across discipline and faculty to co-operate and effect the process
6. Gender consultants and specialists of Agriculture and Development and Resource persons to provide necessary guidance.
7. Sufficient time for the process (minimum 1<sup>1/2</sup> Year).
8. Sufficient funding for the process (at least 5 lakhs)
9. Enough resource and reference materials.



#### **4.2 Specific objectives to be set for the project/ process:**

1. Develop Gender-Integrated approaches in the Curriculum of UG courses.
2. Develop appropriate supporting resource materials required for the gender integrated farm courses.
3. Capacity Building of Scientists for gender responsive teaching of agricultural courses.

#### **4.3 Major events of the engendering process of KAU**

1. Project Team formulation
2. Action Plan Development
3. Consultation with selected scientists of the various faculties, to develop group thinking and identify means of engendering.
4. Brainstorming session of Deans and Directors about the scope of engendering.
5. College level discussion on the scope of engendering in agricultural education.
6. Scientists' orientation workshop on Gender and Agricultural Development.
7. Identification of gender concerns to be integrated in the agricultural syllabus.

#### **4.4 Potential approaches of engendering**

1. Introducing a 2-credit course (1+1) on Human Centered Agricultural Development wherein the introduction on gender perspective- its relevance, contexts, value systems- approaches, gender issues, related field exposures farmers and farming at center place along with socio cultural contexts of farming, farming history and farm traditions, societal values, social and cultural inequities, land ownership, class and caste institutions, wage discriminations, multiple workload, drudgery etc. (This should form the part of all UG courses.)
2. In relation to technologies or crop/ animal management- introduce the related dimensions of gender issues - in different disciplines. (Agronomy, Animal

management, Soil and water conservation, Plant/Animal Breeding, Extension, Economics, Processing, Farm Management, Farm Machinery, processing etc.)

3. Introduce a separate module on Gender sensitization in the course on RAWE/Field Training.
4. Introduce an elective course on “Gender Studies in Agriculture”.
5. Include activities on gender justice and development as part of the National Social Service.
6. Develop the needed supporting/ resource materials.
7. Train the scientists for gender responsive education in agriculture

#### **4.5 Dimensions for Gender Auditing of existing syllabus**

- 1 Gender roles- whether content of the course is related to any physical or decision making activities in farming by women and men.
- 2 Access and control of the resource and benefit
  - Whether the content of the course is related to the availability or use of farm inputs/ resources (land- labour- capital- water- tools- energy- seed- fertiliser- pesticides- technology- information- media)
  - income from farm produce (yield- profit- food- recognition- award)
  - institution- infrastructure- service( agricultural information- training skills- subsidy- credit- insurance- banks- co-operatives- societies- market- transportation- tools)
- 3 Constraints/ problems/ situations in need of improvements/ gender impact/ gender issue
  - no technology/ technological incompatibility/ income generation/ income viability/ wage discrimination/ food security/ occupational healthy hazards/ employment loss etc.

#### **4.6 Structure and content of technical sessions with various stakeholders**

##### **4.6.1 Module for consultation of scientists**

**Duration: 2 days**

**Sessions:**

1. Need and relevance and scope of human and gender justice in sustainable agricultural development. (Talk by Development Specialist followed by interaction)
2. Orientation on concepts of Gender and engendering in agricultural education and interaction. (Resource Person: Gender Specialist)
3. Group Work to identify the possibilities and approaches.
4. Presentation and review; goal setting.

#### **4.6.2 Module for Brainstorming Session for Deans and Directors**

**Duration: One day**

**Sessions:**

1. Introduction of the topic (Vice Chancellor or Deputy Director General of ICAR)
2. Key note Speech on engendering and Agricultural Education (Development Specialist)
3. Concepts and approaches of engendering (Gender Specialist)
4. Interaction session
5. Decisions and recommendations

#### **4.6.3 Module for College level discussion**

**Duration: Half day**

**Sessions:**

Introduction of the topic- Dean

Orientation on the concepts of gender need and relevance of engendering in agricultural education and potential approaches (Gender Specialist)

Interaction and conclusion

#### **4.6.4 Department level Discussion**

Introduction of the topic- Head of the Department.

Discussion, identification of relevant issues and courses in the concerned discipline.

**4.6.5 Syllabus Development, modification and approval by the concerned academic bodies**

**4.6.6 Scientists Workshop/ training for handling the courses.**

**Duration: 5 days**

**Sessions:**

- Identification of gender in the human history
- Gender in self
- Gender in Institutions
- Gender in agriculture
- Roles of change agent and need of engendering agricultural development
- Gender Analysis Approaches

**4.6.7 Module for Intensive Training on Gender Perspective in Agricultural Development for selected scientists (for those scientists who offer the basic course on Human Perspective on Agricultural Development)**

**Duration: 10 days**

**Sessions:**

Need and Relevance of Gender Mainstreaming in Agricultural Development.  
Concepts and approaches of Gender and Gender perspective in Development.  
Gender framework - tools (theory, practicals and field work)  
Gender roles, Changed approaches of development  
Resources- Access and control and issues (land, labour, water, credit etc)  
Gender concerns and agricultural Technology Development  
Gender concerns and TOT Approaches  
Gender concerns and Agricultural Education  
Practice and appropriation of the resource materials/ teaching aids/ pedagogies of the sessions.

#### 4.7 Resource materials to be identified/ to be developed

1. Case studies in identified issues ( locally relevant)
2. Interactive video programs on gender issues (1. shift in cropping pattern - gender impact; 2. Farm mechanisation and its gender impact; 3. Occupational hazards)
3. Reading materials/ reference books on concepts/ Resource books/ methodologies/ framework of gender and development.
4. Documentaries/ photos/ slides on gender roles of major crops and enterprises.
5. Video spots/ films on availability of resources and gender issues.
6. Case studies or PRA exercises on identification of needs constraints of men and women in NRM.

#### 4.8 Engendered Curriculum- Testing, Feedback and Evaluation

The engendered curriculum needs initial testing and modification which requires evaluation and feedback from students and scientists.

Various methods and criteria that can be set towards the evaluating process are

1. Pre and post tests on the attitude- knowledge and skill of the students in relation to gender responsive agricultural development.
2. Appraisal by the scientists: (during the training period and also after offering the sessions/ module)
3. Evaluation by the students
  - for every session (for its effectiveness, tools, content method, resource person, duration etc)
  - recapitulation on previous sessions
  - mid module evaluation and modification.
4. Teachers conducted exams and performance of students
5. Indirect / delayed Evaluation
  - How the new graduates (taught through the gender-integrated syllabus) are different in their development orientation
    - in their gender sensitivity, gender responsive planning, and program targeting.

#### **4.9 Action Plan for Engendering Agricultural Education in Agricultural Universities**

Based on the experiences KAU has derived, the following programme approach is suggested which can be appropriated according to the local demand by any SAUs with similar structure and functions. (Tables furnished on next page)

## PLAN OF ACTION

### A. Action Plan for Engendering Agricultural Education

Sl. No.	Activity	With Whom	How	When	Who	Outcome
1.	Policy Decision/ sanction by the decision making authority (Vice Chancellor)	Deans, Directors, Funding Agency, ICAR etc.	Discussion And Reviews		Vice Chancellor, Directors, Officer in charge of the Gender mainstreaming	<ol style="list-style-type: none"> <li>1. Decision to take up the project.</li> <li>2. Two committees of the implementation               <ol style="list-style-type: none"> <li>a) project team (implementing scientists with one PI)</li> <li>b) Technical Advisory Committee (Vice Chancellor, senior development specialist, Gender resource person, Deans/ Directors of the University/ Student representative)</li> </ol> </li> </ol>
2.	Preliminary meeting of the Project Team and Technical Advisory Committee	Committee members	Discussion	1 <sup>st</sup> week of the project	PI & Project Team	<ol style="list-style-type: none"> <li>1. Specific objectives and action plan</li> <li>2. Project team expansion to represent different discipline/ campus</li> </ol>
3.	Detailed plan preparation, submission, and approval by the organisation	Project team members	Discussion	3 <sup>rd</sup> week	PI & Project Team	<ul style="list-style-type: none"> <li>- Identification of the time frame/ specific activities- resource persons</li> <li>- needed gender sensitisation for the project team and consultation with selected scientists of the University</li> </ul>

4	Gender sensitisation and consultation for the project team and selected scientists	Project team member and selected scientists	Sensitization and consultation on engendering and discussion on the KAU model	2 <sup>nd</sup> month 1 <sup>st</sup> week 5 days session	Gender consultant, Gender focal point and resource person and advisory committee members		<ul style="list-style-type: none"> <li>- conviction/understanding the need/ relevance of engendering</li> <li>- ideas/ deviation on the suggested needs of engendering</li> <li>- documentation/on the decision/ suggestion</li> <li>- identified list of gender concerns</li> </ul>
5	Brainstorming session on engendering of agricultural curriculum	Directors, Deans, Academic Officers, Heads of departments	Introduction of the topic by a higher authority of the national system of education - deliberation speeches by advisory committee- presentation of KAU model	4 <sup>th</sup> week of 2 <sup>nd</sup> month	PI and team		<ul style="list-style-type: none"> <li>- remarks/ view points</li> <li>- differences of opinions</li> <li>- suggestions</li> <li>- support of the different levels in the institutions</li> </ul>
6	College level a. discussions b. continued by department level discussions c. Task Force Committee- for developing the modified curriculum	All the scientists in the College council All the Scientists in the department	Discussion on the recommendation of KAU model  Possibility and scope within the discipline and identification of relevant courses and scientists	5 <sup>th</sup> month - 7 <sup>th</sup> month in different campuses  6 <sup>th</sup> - 7 <sup>th</sup> month	Deans, Heads and Project teams  Heads of Departments		<p>Scientists level suggestions</p> <p>Suggestions, task force/ identified list courses</p>



7	Review meeting of the project	a. project team b. advisory committee	Presentation of the events and outcome	8 <sup>th</sup> month	PI and team		Changes 1. deviation if any needed 2. decision to provide capacity building programs in each campus to the task force
8	1. identification of gender consultant 2. developing training modules	College level task force	Discussion on the KAU module and adaptations according to the local needs	9 <sup>th</sup> month	Project team		- gender consultant , resource person - appropriate modules, resource materials, training program - list of trainees - schedule of programming
9	Deputation of scientist to the sensitization and curriculum workshops	Task force members (about 20-25)	-Sensitisation events - working on the topics to identify issues and courses - presenting worked out courses - submission of modified engendered course - suggestions on basic course on ' Human centred agrl. development'	10 <sup>th</sup> - 11 <sup>th</sup> months(suppose there are three colleges)			- Gender sensitivity/ conviction of participants - Engendered - Suggestions topics/ curriculum to be included in the Basic Course Curriculum
10.	Project team meeting	Project team	Compilation of all college level suggestions and auditing by the team and finalisation	12 <sup>th</sup> month	Project team		1. Finalised list of courses to be engendered 3. Content for the basic course

11.	Interaction with 1. extension personnel 2. farmers 3. students community	Identify suggestions and needs	10 month of 2 <sup>nd</sup> year	Project team and task force members			- Field level suggestions modifications of the content of the basic course
12.	Project Review meeting and consultation	Project team, advisory committee, gender consultant and resource persons, deans, directors	Presentation on the outcomes - list of courses for gender integration - content of basic course	Vice Chancellor or and Director of Academics			-
13.	Interaction with 1. Extension Personnel 2. farmers 3. Students community	Identify suggestions & needs	10 <sup>th</sup> month of 2 <sup>nd</sup> year	Project Team and Task Force members			field level suggestions modifications
14.	Project review meeting	Project Team, Advisory Committee, Gender Consultant and resource Persons, Deans, Directors	Presentation on the outcomes -list of courses for gender integration -content of basic course	2 <sup>nd</sup> month 2 <sup>nd</sup> year	Vice Chancellor & Director Academics		1. Final list of courses for gender integration 2. Approval of the University 3. Report submission to the Director of Academic/ funding agency
15.	Placing in the Board of Studies and Academic Council	1. Board of studies members 2. Academic council	Discussion and decision to implement or not	2 <sup>nd</sup> month 2 <sup>nd</sup> year	Director of Academic and Project Team		Decision

16.	a)If decision is positive 1. Preparation of revised syllabus 2. training of Task force/ concerned teachers for handling the courses b) needed revision/ changes steps to take up the modifications	Scientists	Capacity Building to handle the gender integrated courses (1week) and basic courses(3weeks) and also handle resource materials		Director of Academic and Project Team		<ul style="list-style-type: none"> <li>- modified syllabus</li> <li>- basic course</li> <li>-orientation and skill to handle the gender integrated courses and its resource materials</li> <li>- capacity to offer the basic course</li> </ul>
17.	Implementation of the new syllabus	Students	BSc(Ag) education with the modified syllabus				<ul style="list-style-type: none"> <li>- gender sensitivity among the students</li> <li>- more orientataion to the rural side</li> <li>- understanding/ recognising the customers stakeholders</li> <li>- gender problems- needs</li> <li>- future task and responsibility</li> </ul>
18.	Initial appraisal & Evaluation (after one semester of offering the Basic course and engendered syllabus)	Student and teacher				After one semester and one year or monitoring evaluation and modification.	<ul style="list-style-type: none"> <li>- Questionnaire</li> <li>- Indicators</li> <li>- Resource materials</li> <li>- Reports</li> <li>- Curriculum developed</li> <li>- Needs/ issues identified students and teachers</li> </ul>
19.	Review Meeting Project Team Advisory Committee				Project team		Revision and standardisation/ implementation

## Appendix-I

### The RAISON d'ETRE (WHY) and HOW ENGENDERING UG CURRICULUM In Agriculture

Thought Paper by K.N. Shyamasundaran Nair & P. S. Geethakutty

It was about five years ago, some time in 1996-97 that the Kerala Agricultural University revised the syllabi of the graduate and postgraduate courses of the Faculty of Agriculture last time. Recently the KAU has initiated steps to revise the syllabi. The Vice-Chancellor has sent out circulars to the Director of P G Studies and the Deans to start consultation with the Faculty on revising the syllabi for the graduate and postgraduate courses offered by the Agriculture Faculty. Various departments/disciplines (quite often both department and discipline are used interchangeably although in the academic parlance they are not one and the same) are in the process of revising the syllabi. It is therefore appropriate that we capture this opportunity to engender the curriculum through the introduction of gender studies in the graduate courses of Kerala Agricultural University. If we do not cash in on this opportunity now, we may have to wait for the next syllabi revision, which may occur perhaps five years hence.

#### **The raison d'etre (why) engendering the UG Curriculum of farm courses?**

The raison d'etre of engendering the farm courses Curriculum can be found only if we try to find answer to:

1. That can be answered only if we seek: what do we expect from our Farm Graduates? Or why are we producing Farm Graduates? (More explicitly the graduates in Agriculture, Veterinary Sciences, Agricultural Engineering, Fisheries, Dairy Sciences, Forestry, Co-operation, Banking and Management).
2. That can be answered only if we seek: what are the objectives of Farm Graduates? (Agriculture herein after refers to all those activities connected with land, water and natural vegetation including crop management, fisheries and related institutions).
3. That can be answered only if we seek: how agricultural development is sought to be brought about? So let us try to find answer to the last question to start with.

#### **The paradigm shift in agricultural development. Hence the reorientation/ restructuring of agricultural development?**

Prime objective of agricultural development planning has been that of augmenting the production of food grains to meet the consumption needs of the population, raw materials for the industry and surplus for earning foreign exchange through exports. Policies, strategies and programmes were designed to increase the production of selected

commodities which are tradable in the market for such as foodgrains, meat, milk, fish, cotton, tea coffee etc) for consumption, raw materials or export. Programmes were primarily center on increasing the productivity and production potential of the biophysical resources viz. land and water, supply of inputs, infrastructure and support services including technology generation, training and extension, for enhancing the production of these commodities.

Generally recognized as the commodity centered development, this approach paid dividends in terms of:

- Increase in the production and productivity per unit of land
- Enhanced availability of food grains
- Savings in land

Despite, at the same time

- Decline the proportion of GDP originating from agriculture
- Decline in the dependence of employment and livelihood only marginally
- Per capita capacity to sustain livelihoods decline
- Notwithstanding 50-60 million tons of foodgrains in go downs yet 1/4<sup>th</sup> to 1/3<sup>rd</sup> of the fellow citizens remain under-nourished and malnourished.

Thus the experience of the past half a century have shown that the commodity centered development which we have been pursuing hitherto— may appear/ or may have brought dividend in short run as food self sufficiency, grain mountains. But in the long run it will be unsustainable because of the social conflicts and alienation. Even physically unsustainable on account of the resource depletion (ground water in Punjab) and deterioration (water logging, saline lands in the major irrigated areas), soil erosion in rainfed areas, denudation of natural vegetation, loss of biodiversity, increasing quantities of inputs to generate additional production.

### **Redefining the objectives of agricultural development**

Production is a necessary condition but not a sufficient condition for sustainable agricultural development.

The 10<sup>th</sup> Five Year Plan recognizes that commodity production alone is sufficient. Agriculture should provide livelihoods. That alone is capable of minimising poverty if not eradicate.

What development orientation we should bring about? For determining that let us try to answer the following questions.

- Is agricultural development means only commodity production or
- Should it not be a human centered agricultural development, focusing the development of those who are engaged in farming at the centre-stage

It follows that a shift from commodity to resource development approach is called for. Resource approach calls for the development potential of biophysical (individual and community) and human resources to which the communities have access. Through integrated use and management of the resources, and value addition locally, create more livelihoods. Instead of activity to system approach to the development resources.

Can the physical dimensions can stand-alone? Taking apart human element, technology cannot stand. Sustainability of the technology push itself is contingent upon the satisfactory harmonization of the social concerns. But the very economic sustainability is contingent upon the latter.

Is there any need to be humane and human centered- value oriented in development (development with human face)?

If focus is only on commodity production and not human development- then many of the concerns we are exercised over are irrelevant.

What should a forward-looking visionary development in agriculture seek for?

It is in this context the relevance of a paradigm shift in agricultural development- relevance of social concerns and need for evolving a human centered development with sustainability and social equity, at the centre stage of which gender equity is the centre-piece, arises.

**To those who are not convinced we have to bring in, the importance of women in agriculture:** Gender roles are to be seen in terms of:

- Economic contribution of women
- Participation in agriculture
- Efficiency increase/ and skills
- Tools for increasing the productivity

**Justification for gender concerns is sought not in terms of social concerns but in its own right as a contributor to the farm/agricultural economy. It is amply justified, in that by far the most dominant significant input in agriculture is labour and nearly one half of it is a farmwoman.**

**What is the role of human element for those matter women in agriculture?**

1. Physical involvement (skill upgradation, efficiency)
2. Decision making

Physical participation

- Skill- qualitative- related gender roles- and technologies
- Efficiency-quantitative- technologies

Resource use and management (conservation-preservation management-equitable sharing)

Decision-making – at various levels of farm operations

Human element in agriculture- this has to be taken as into different roles, and gender issues.

#### A few relevant Concepts and Terms on Gender

**Gender:** Gender means the socially constructed roles and responsibilities assigned to women and men in a given culture or location and the societal structures that support them. Gender is learned and changes over time.

**Gender equality:** Is about men and women being exactly the same in quantity, degree or value. Mostly it refers to equality of opportunity, which means that women and men should have equal rights and entitlements to human, social, economic, and cultural development, and an equal voice and political life.

**Gender equity:** Is a condition in which men and women participate as equals, have equal access to resources, and equal opportunities to exercise control? It is the outcome of gender equality. It is defined as what is just and fair and represents a value judgement.

**Gender Analysis:** Is the systematic effort to document and understand gender roles and relations within a given context? Gender Roles arise from socially perceived differences between men and women that define how women and men should think, act and feel. Gender roles are constantly changing and can vary within and between cultures.

In these contexts is there any need for agricultural extension officer to bother about the gender equity, economic issues, value basis etc?

Is there any need to incorporate all these dimensions in the course content?

To make the agricultural development worker feel that there should some value system in the development efforts of the society in other words value based development.

#### Expectations from Farm Graduates

What do we expect from our Farm Graduates? Or why are we producing Farm Graduates?

Traditionally hitherto the main purpose of farm graduates is to staff the advisory/regulatory services of the government (mainly the Agriculture and Allied Departments and Community Development) in organizing the development of agriculture.

They should provide- technical support to agricultural development through

- Extension & transfer of technology (TOT) advisory
- Provide support services (input supply) and infrastructure through development institutions of the government its agencies,
- Managerial support to agribusiness including farmers,
- Generation of technology through research and development

### **How of engendering the Curriculum of farm Courses - Points for thought**

We can work out several models of gender integration

### **Possible Actions for Engendering**

8. Introducing a 2-credit course (1+1) on Human Centered Agricultural Development Wherein the introduction on gender perspective- its relevance, contexts, value systems- approaches gender issues, related field exposures etc can be imparted. (This should form the part of all UG courses.)
9. In relation to technologies or crop/ animal management- introduce the related dimensions of gender issues - in different disciplines. (Agronomy, Animal management, Soil and water conservation, Plant/Animal Breeding, Extension, Economics, Processing, Farm Management, Farm Machines etc.)
10. Introduce a separate module on Gender sensitization in the course on RAWE/Field Training.
11. Introduce an elective course on "Gender Studies in Agriculture".
12. Include activities on gender justice and development as part of the NSS.
13. Develop the needed course content/ resource material.
14. Train the scientists for gender responsive education in agriculture
15. A series of lectures (one per semester on topics of relevance) Compulsory attendance but not test and quizzes.



## Appendix -2

### Resource Persons and participants of the Consultation Workshop on *“Building Gender Integrated Agricultural Curriculum”* held on 10th and 11th May 2002

1. Ms.Mina Swaminathan,  
Director, Uttara Devi Resource Centre for Gender & Development  
MSSRF, Chennai
2. Dr.K.N.Shyamasundarn Nair, Former Vice Chancellor, KAU,  
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3. Mrs. Sumi Krishna, 103, Farah Court, 185 Defence Colony  
5<sup>th</sup> Main, Indira Nagar, Bangalore -560038
4. Dr. P.Ahamed, Associate Professor, Dept. of Agricultural Extension,  
College of Horticulture, Vellanikkara
5. Dr.P.S.John, Associate Professor & Head  
Cashew Research Station, Madakathara
6. Dr.C.George Thomas, Associate Professor, Dept. of Agronomy,  
College of Horticulture, Vellanikkara
7. Dr.Jim Thomas, Associate Professor, Dept. of Agrl Entomology,  
College of Horticulture, Vellanikkara
8. Dr. Jessy Thomas, Associate Professor, Dept. of Agrl. Economics,  
College of Horticulture, Vellanikkara
9. Dr.K.B.Sheela, Associate Professor, Dept. of Processing Technology,  
College of Horticulture, Vellanikkara
10. Dr. F.M.H.Khaleel, Associate Professor & Head, Dept. of Agrl. Extension,  
College of Horticulture, Vellanikkara
11. Dr. P.A. Nazem, Associate Professor, CPBMB,  
College of Horticulture, Vellanikkara
12. Dr.S.Shyama Kumari, Associate Professor, Dept. of Home Science  
College of Agriculture, Vellayini
13. Dr. V. Ganesan, Associate Professor,  
Dept. of Post Harvest Technology & Agricultural Engineering, KCAET, Tavanur

14. Dr. Daisy C. Kappen, Asst. Professor  
College of Fisheries, Panangad
15. Dr. K.S.Purushan, Associate Professor & Head  
Fisheries Station, Puduvelyepu
16. Dr. Geetha Susan Philip, Associate Professor  
KCAET, Tavanur
17. Dr. Vimala Kumari, Associate Professor, Dept. Of Home Science,  
College of Agriculture, Vellayini
18. Dr. Abida, Asst. Professor, Dept. of Plant Physiology  
College of Agriculture, Padanakkad
19. Dr. M.R. Subhadra, Associate Professor,  
College of Veterinary & Animal Sciences, Mannuthy
20. Dr. Jiji. R.S, Asst. Professor,  
College of Veterinary & Animal Sciences, Mannuthy
21. Dr.P. Rajendran, Prof. & Head, KVK, Pattambi
22. Dr. K:J. Joseph, Associate Professor,  
RARS, Kumarakom, Kottayam
23. Dr. P.S.Geethakutty, Associate Professor,  
College of Horticulture, Vellanikkara
24. Ms. Chithra, Research Associate, MSSRF, Chennai
25. Ms. Sheeja Karalam, Research Associate,  
Centre for Studies on Gender Concerns in Agriculture, Vellanikkara
26. Ms. V.S.Sreeja, Research Associate,  
Centre for Studies on Gender Concerns in Agriculture, Vellanikkara

**Appendix-3**  
**List of participants for the BRAINSTORMING SESSION ON**  
**REVISION AND ENGENDERING OF UG CURRICULUM IN KAU**  
**held on 18<sup>th</sup> June'2002**

1. Dr J. C. Katyal, DDG (Education), ICAR
2. Dr. K. V. Peter, Vice- Chancellor, KAU
3. Dr. P. A. Wahid, Director(Academic & PG Studies)
4. Dr. K. N. Shyamasundaran Nair, Former Vice- Chancellor, KAU
5. Dr. P.S. Geethakutty, Project Co-ordinator, CSGCA, KAU

**Directors & Deans**

6. The Registrar, KAU HQ
7. The Comptroller, KAU, HQ
8. The Director (Physical Plant), KAU, HQ
9. The Deputy Registrar, (Acad), Kau, HQ
10. Dr. Vikraman Nair, The Director of Research, KAU
11. Dr. P. A. Wahid, Director (Academic & PG Studies), KAU
12. Dr. J. Abraham, Director of Students Welfare, College of Veterinary Science, Mannuthy
13. Dr. A.I. Jose, Director of Extension, Communication Centre, Mannuthy
14. Dr. Sunderesan Nair, The Associate Director of Research, KAU
15. Dr. Sreekantan Nair, College of Agriculture, Vellayani.
16. Dr. John Thomas, KCAET, Tavanur
17. Dr. P.P. Balakrishnan, College of Veterinary & Animal Sciences, Mannuthy
18. Dr. Damodaran Namboodiri, College of Fisheries, Panangad
19. Dr. A. Sukumara Varma, Associate Dean, College of Horticulture, Vellanikkara
20. Dr. Abdul Salam, College of Agriculture, Padanakkad
21. Dr. Mohan Das, College of Co-operation & Banking, Vellanikkara
22. Dr. Luckins. C. Babu, College of Forestry, Vellanikkara
23. Dr. Prasad, Special Officer, College of Dairy Science & Technology, Mannuthy

24. Dr. P.Balachandran, Associate Director of Research, RARS, Pattambi
25. Dr. P.Joy, Associate Director of Research, RARS, Kumarakom
26. Dr. Saraswathy, Associate Director of Research, RARS, Vellayani
27. Dr. Aipe, Associate Director of Research, RARS, Ambalavayal
28. Dr. Alexander, Associate Director of Research, RARS, Kayamkulam
29. Dr. Mamooty, Associate Director of Research, RARS, Pilicode

#### **The Professors (Academic, UG)**

30. Dr. Achuthan Nair, College of Agriculture, Vellayani
31. Dr. Sankaranarayanan, College of Horticulture, Vellanikkara
32. Dr.P.C.Balakrishanan, College of Agriculture, Padanakkad
33. Dr. P.Gopikumar, College of Forestry, Vellanikkara
34. Dr. A. Sukumaran, College of Co-operation & Banking, Vellanikkara
35. Dr.T.Srikumaran, , College of Veterinary & Animal Sciences, Mannuthy
36. Dr. T.M.Sankaran, College of Fisheries, Panangad
37. Dr. Alexander Seth, KCAET, Tavanur
38. Dr. A.K. Beena, College of Dairy Science & Technology, Mannuthy

#### **CSGCA Team**

39. Dr. P.S.Geethakutty, Associate Professor & Project Co-ordinator, CSGCA,  
Vellanikkara
40. Dr. S. Shylaja, Associate Professor, College of Agriculture, Vellayani
41. Dr. S.Shymakumari, Associate Professor, College of Agriculture, Vellayani
42. Dr. K.J. Joseph, Associate Professor, KVK, RARS, Kumarakom
43. Dr.K.S.Purushan, Associate Professor, College of Fisheries, Panangad
44. Dr. M.R.Subadra, Associate Professor, College of Veterinary & Animal Sciences,  
Mannuthy
45. Dr. P.A. Nazeem, Associate Professor, Centre for Plant Biotechnology&  
Molecular Biology
46. Dr. P. Rajendran, Associate Professor, KVK, Pattambi
47. Dr. Radhamma Pillai, KVK, RARS, Ambalavayal

48. Dr. M.P.Giridharan, Associate Professor, RARS, Pilicode
49. Dr. R.M. Prasad, Prof. & Head, Communication Centre, Mannuthy
50. Dr. George Thomas, Associate Professor, CCRP, COH, Vellanikkara
51. Dr. V. Ganesan, Associate Professor, KCAET, Tavanur
52. Dr. E. Nanu, College of Veterinary & Animal Sciences, Mannuthy
53. Dr. P.I. Gee Vargese, College of Veterinary & Animal Sciences, Mannuthy
54. Smt. Lalitha, Librarian, Central Library, Vellanikkara
55. Dr. C.T. Abraham, Associate Professor, Weed Control
56. Dr. U. Jaikumaran, Associate Professor, Agri. Research Station, Mannuthy
57. Dr. N.K.Vijayakumar, Associate Professor, COF, Vellanikkara

#### Appendix-4

### Participants of the college level discussions of KAU - FAO project on "Building Gender Integrated agricultural Curriculum, Capacity and Resource Materials' at different campuses under Kerala Agricultural University

#### College of Horticulture on 1<sup>st</sup> August, 2002

1. Dr.A. Sukumara Varma, Associate Dean, College of Horticulture
2. Dr. M.R. Sankaranarayanan, Prof. & Head, Dept. of Agrl.Engineering
3. Dr.K.Pushkaran, Prof. & Head, Dept. of Plant Breeding & Genetics
4. Dr. S. Mini, Asst. Professor, Dept. of Soil & Agrl. Chemistry
5. Dr. Haseena Bhaskar, Asst. Prof, Dept. of Agrl. Entomology
6. Mrs. Suma. B, Asst. Prof., Dept. of Plantation Crops & Spices
7. Dr. Jayasree Krishnankutty, Asst. Prof., Dept. of Agrl. Extension
8. Dr. P.K.Sushma, Associate Professor, Dept. of Soil & Agrl. Chemistry
9. Dr.K. C. Marykutty, Assoc. Prof. & Head, Soil & Agrl. Chemistry
10. Dr.P. A. Nazeem, Associate Professor, CPBMB
11. Dr. Betty Bastin, Asst. Prof., Dept. of Plant Breeding & Genetics
12. Dr.T. Girija, Asst. Prof., AICRP on Weed Control
13. Dr. Achama Oommen, Professor, Dept. of Plant Breeding & Genetics
14. Dr. Nandini. K, Associate Professor, Dept. of Plant Breeding & Genetics
15. Dr. Dijee Bastin, Asst. Professor, Dept. of Plant Breeding & Genetics
16. Dr. R. Kesavachandran, Associate Professor, CPBMB
17. Dr.T.Radha, Associate Professor, Dept. of Pomology & Floriculture
18. Dr.A.K.Babylatha, Associate Prof., Dept. of Pomology & Floriculture
19. Dr.K.A.Marium, Associate Professor, Dept. of Soil & Agrl. Chemistry
20. Dr.P.A.Valsala, Associate Professor, CPBMB
21. Dr.P.S.Geethakutty, Associate Professor, CSGCA
22. Ms. Sheeja B Karalam, Research Associate, CSGCA
23. Ms. V. S. Sreeja, Research Associate of CSGCA

**College of Dairy Sciences and Technology, Mannuthy on 7<sup>th</sup> August 2002 (Forenoon)**

1. Dr. Beena, Assistant Professor
2. Dr. Sreeja, Assistant Professor
3. Dr. P.S. Geethakutty, Associate Professor and PI of the project.
4. Kum. Sheeja B Karalam, Research Associate, CSGCA

**College of Co-operation Banking & Management, Vellanikkara on 7<sup>th</sup> August 2002 (Afternoon)**

1. Dr. E.V.K. Padmini, Associate Professor
2. Dr. U. Ramachandran, Associate Professor
3. Dr. Mohan, Associate Professor
4. Dr. Sukumaran, Associate Professor
5. Dr. M.A.Lissy, Associate Professor
6. Dr. George, Associate Professor
7. Dr. Bonny face, Asst. Professor
8. Dr. A. Sakeer Hussain, Asst. Professor
9. Dr. K.N. Usha Devi, Asst. Professor
10. Dr. K.A. Sunanada, Asst. Professor

**College of Fisheries, Panagad, on 12<sup>th</sup> August, 2002**

1. Dr.K.S.Purushan, Associate Professor, Fisheries Research Station, Puthuveypu
2. Dr. K.V.Jayachandran, Associate Professor, College of Fisheries
3. Dr. V. Ambili Kumar, Assistant Professor, College of Fisheries
4. Sri. T. H.Sankaran, College of Fisheries
5. Dr. K.Jayasree Vadhyar, Associate Professor, College of Fisheries
6. Dr. Susheela Jose, Associate Professor, College of Fisheries
7. Smt. Omana Pavunny, Assistant Professor, College of Fisheries
8. Dr. Thressiamma, Associate Professor, College of Fisheries
9. Dr. Lizy Behanan, Assistant Professor, College of Fisheries
10. Dr. Anu Mercy. T.V., Assistant Professor, College of Fisheries
11. Smt. Alphi Korath, Assoc. Professor, College of Fisheries

12. Smt. Mallika .V., Assoc. Professor, College of Fisheries
13. Dr. Devika Pillai, Assoc. Professor, College of Fisheries
14. Dr. M.S. Raju, Assoc. Professor, College of Fisheries
15. Sri. C.J.Cherian, Associate Professor, College of Fisheries
16. Sri. N.N.Raman, Assistant Professor, College of Fisheries
17. Sri. J. Rajasekharan Nair, Associate Professor, College of Fisheries
18. Sri. T.M.Jose, Associate Professor, College of Fisheries
19. Sri. Dr. B. Manoj Kumar, Assoc. Professor, College of Fisheries
20. Dr. Mathew. K. M., Associate Professor, College of Fisheries
21. Sri. K. Dinesh, Associate Professor, College of Fisheries
22. Sri. Sajan George, Associate Professor, College of Fisheries.
23. Smt. Daisy. C. Kappan, Associate Professor, College of Fisheries
24. Dr. P. S. Geethakutty, Associate Professor, College of Horticulture,  
Vellanikkara

**College of Forestry on 13<sup>th</sup> August, 2002**

1. Dr. N.K. Vijayakumar, Associate Professor
2. Dr. K. Gopikumar, Associate Professor
3. Dr. K. Vidyasagar, Assistant Professor
4. Dr. B. Ambika Varma, Assistant Professor
5. Dr. E.V. Annop, Assistant Professor
6. Dr. S. Gopakumar, Assistant Professor
7. Dr. P.S.Geethakutty, PI
8. Ms. V. S. Sreeja, Research Associate of CSGCA

**KCAET, Tavannur on 27<sup>th</sup> August 2002**

1. Dr.K.John Thomas, Dean
2. Dr. P.Rajendran, Associate Professor, KVK, Pattambi
3. Dr. M.Sivaswamy, Associate Professor
4. Dr.Jippu Jacob, Associate Professor
5. Dr. Sathian. K.K., Associate Professor



6. Dr. Manoj Mathew, Assistant Professor
7. Dr. K.I.Koshy, Associate Professor
8. Mr. Abdul Hakim. V.M., Assistant Professor
9. Dr. K.P.Sudheer, Assistant Professor
10. Dr. T.N.V. Murali Krishna Rao, Research Associate
11. Dr. Rakesh K.M, Research Associate
12. Dr. M. Damodar Rao, Research Associate
13. Dr.Salini Pillai. P., Assistant Professor
14. Dr. Asha Joseph, Assistant Professor
15. Dr. Shyla Joseph, Assistant Professor
16. Mr. Vidhu. K.P., Research Associate
17. Mr. Prince. M.V., Assistant Professor
18. Ms. D. Sasikala, Assistant Professor
19. Ms. Santhi Mary Mathew, Assistant Professor
20. Ms. Annie John, Research Associate
21. Ms. Jinu Francis, Research Associate
22. Ms. Sindhu Bhaskar, Research Associate
23. Ms.Rem. K.P., Assistant Professor
24. Mr. Selvan.P., Research Associate

**College of Agriculture, Padanakkad on 11<sup>th</sup> September 2002**

1. Dr. K. Abdul Salam, Associate Dean
2. Dr. Latha Bastin, Associate Professor
3. Dr. Sujatha. R., Assistant Professor
4. Dr. T.S. Manoj, Assistant Professor
5. Dr. Sreekumar, K.M., Assistant Professor
6. Dr. Pradeep Kumar, T., Assistant Professor
7. Dr. Jacob John, Assistant Professor
8. Dr. A. Rajagopalan, Associate Professor
9. Dr.K.N.Satheesan, Assistant Professor
10. Dr. Saviankumar. D.U, Associate Professor

11. Mr. Rethesh P.K, Assistant Professor
12. Dr. G.K.Mahapatra, Associate Professor
13. Dr.P. R. Suresh, Associate Professor
14. Mrs. Minimol, Assistant Professor
15. Dr. P. S. Geethakutty, PI of the Project

**College of Agriculture, Vellayani 2<sup>nd</sup> September 2002 at 2.00pm**

1. Dr. Sreekandan Nair, Dean
2. S.Balakrishnan , Professor, ( Research Co ordination)
3. Philipose, Associate Prof. & HOD, Processing Technology
4. Mr. N.Kishore, Assistant Professor (Agrl. Extension)
5. Dr. M. Subhramaniya Iyer, Associate Professor (Soil Science & Agrl. Chemistry)
6. Dr. G. Sobhana, Associate Professor, TSS, Vellayani.
7. Dr. P.Saraswathi, Professor & Head (Agrl. Statistics)
8. Dr. Susamma Mathai, Professor (Agrl. Entomology)
9. Dr. D.Chandramony , Professor & Head,(Plant Breeding and Genetics)
10. Dr. S.Shyamakumari, Associate Professor, (Home Science)
11. Smt. S. Subaidabeevi, Asst. Professor -Sln. Grade, (Horticulture)
12. Dr. Sheela K.R., Associate Professor (Agronomy)
13. Dr.P.A.Nazeem, Associate Professor, College of Horticulture, Vellanikkara.
14. Dr. Komala Amma, E, Associate Professor (Acad.)
15. Dr. Seema. B., Assistant Professor, (Agrl. Extension )
16. Dr. K. Rajmohan, Associate Professor, (Horticulture)
17. Dr. P. S. Geethakutty, Associate Professor & Project Co-ordinator, CSGCA, College of Horticulture, Vellanikkara.

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