Course Title with Credit Load
M.Sc. in Agricultural Extension Education

Major Courses 20

Course Code	Course Title	Credit Hours
EXT-501*	Extension Landscape	2(2+0)
EXT-502*	Applied Behaviour Change	3(2+1)
EXT-503*	Organisational Behaviour and Development	3(2+1)
EXT-504*	Research Methodology in Extension	3(2+1)
EXT-505*	Capacity Development	3(2+1)
EXT-506*	ICTs for Agricultural Extension and Advisory Services	3(2+1)
EXT-507*	Evaluation and Impact Assessment	3(2+1)

Minor Courses 08

a. It is suggested the student may choose at least two out of three courses listed below as part of minor courses as these are related to policy advocacy and aim to build larger understanding of the subject.
b. Further, it is suggested that the student may choose the remaining Courses from any other discipline including the disciplines of Agrl. Economics/ABM and are related to the research problem selected by the student.
c. The final choice of the minor courses should be mandatorily approved by the Student Advisory committee/HoD.

EXT-508	Managing Extension Organisations	3(2+1)
EXT-509	Enabling Innovation	2(1+1)
EXT-510	Gender Mainstreaming	3(2+1)

Supporting Courses 06

STAT	Statistical Methods for Applied/ Social Sciences	3(2+1)
STAT/COMP	Computer Applications for Agricultural Extension Research	3(2+1)

It is suggested that the student may choose the Supporting Courses other than the listed courses, provided the opted courses are related to the research problem selected by the student and be mandatorily approved by the Student Advisory committee/HoD".

Common Courses 05

1. Technical Writing and Communications Skills
2. Intellectual Property and its management in Agriculture
3. Agricultural Research, Research Ethics and Rural Development Programmes

Some of these courses are already in the form of e-courses/ MOOCs. The students may be allowed to register these courses/ similar courses on these aspects, if available online on

Course Title with Credit Load
Ph.D. in Agricultural Extension Education

Major Courses 12

Course Code	Title of Course	Credit Hours
EXT-601*	Policy Engagement and Extension	2+1
EXT-602*	Methodologies for Social and Behavioural Sciences	2+1
EXT-603*	Technology Commercialization and Incubation	2+1
EXT-604*	Educational Technology and Instructional Design	2+1

Minor Courses 06

  a. It is suggested the student may choose at least one out of three courses listed below as part of minor courses as these are related to policy advocacy and bring in global perspectives with an aim to build a larger understanding of the subject to the student.
  b. Further, it is suggested that the student may choose the remaining Courses from any other discipline including the disciplines of Agrl. Economics/ABM and are related to the research problem selected by the student.
  c. The final choice of the minor courses should be mandatorily approved by the Student Advisory committee/HOD.

EXT-605	Risk Management and Climate Change Adaptation	2+1
EXT-606	Livelihood Development	1+1
EXT-607	Facilitation for People centric Development	2+1

Supporting Courses 05

STAT	Multivariate Statistical Methods for Extension Research	2+1
COM	Multimedia and Applications	1+1

It is suggested that the student may choose the Supporting Courses other than the listed courses, provided the opted courses are related to the research problem selected by the student and be mandatorily approved by the Student Advisory committee/HOD".

Seminars 2

EXT-691	Doctoral Seminar-I	1+0
EXT-692	Doctoral Seminar-II	1+0
	ii. Thesis / Research	75
	Total	100

Teaching Schedule and Lesson Plan

Theory   EXT 501: Extension Landscape (2+0)

Lecture	Topic	Weightage
BLOCK 1	**GLOBALLY,WHAT IS NEW IN EXTENSION**	
Unit I	**Challenges before Extension and Advisory Services (EAS)**	**23**
1	**Extension and Advisory Services (EAS)**- Meaning (embracing pluralism and new functions) New Challenges before farmers and extension professionals: **Natural Resource Management**-Supporting farmers to manage the declining/deteriorating water and soil for farming	5
2	**Gender Mainstreaming**- How extension can enhance access to new knowledge among women farmers; **Nutrition- Role** of extension in supporting communities with growing nutritious crop and eating healthy food	4
3	**Linking farmers to markets**- Value chain extension including organizing farmers, strengthen value chain and supporting farmers to respond to new standards and regulations in agri-food systems; **Adaptation to climate- changes**-How extension can contribute to up-scaling Climate Smart Agriculture;**Supporting family farms**- strengthening the capacities of family farms	5
4	**Migration**-Advisingfarmers to better respond to opportunities that emerge from increasing mobility and alsosupporting migrants in enhancing their knowledge and skills; **Attracting and Retaining**-Youth in Agriculture including promotion of agripreneurship and agri-tourism	5
5	**Urban and peri-urban farming**- How to support and address issues associated with urban and peri-urban agriculture; **Farmer distress**, **suicides**- Supporting farmers in tackling farm distress	4
Unit 2	**New Functions and New Capacities**	**13**
6&7	**Beyond transfer of technology**: Performing new functions to deal with new challenges;**Organising producers into groups**-dealing with problems that need collective decision making such as **Natural Resource Management (NRM) and access to markets**	4
8	**Mediating conflicts and building consensus**to strengthen collective decision making; **Facilitatingaccess to credit, inputs and services**-including development of service providers	2
9	**Influencing policies**to promote new knowledge at a scale ,**Networking and partnership** development including convening multi-stakeholder platforms/innovation platforms	2
10	**New Capacities needed by extension and advisory services at different levels** –at the individual (lower, middle management and senior management levels), organizational andenabling environment levels	3
11	**Core competencies**at the individual level; Variedmechanisms for capacity development (beyond training)	2
Unit 3	**Pluralism in EAS**	**10**
12	**Pluralism in Extension Delivery**: Role of **private sector**(input firms, agri-	2

	business companies, consultant firms and individual consultants)- Trends in the development ofprivate extension and advisory services in India and other countries		
13	Challenges faced by private extension providers	2	
14	Role of **Non-Governmental Organizations**(National/international)/ Civil Society Organizations (CSOs) in providing extension-Experiences from India and other countries	2	
15	**Producer Organizations**- Role in strengthening demand and supply of extension services; their strength and weaknesses-experiences from different sectors	2	
16	Role of **Media and ICT advisory**service providers; global experiences with use of media and ICTs in advisory services provision	2	
BLOCK 2	**INSIGHTS FROM INNOVATIONSTUDIES AND NEW EXTENSION APPROACHES**		
Unit 1	**From the Linear Paradigm to Systems Paradigm**	**12**	
17	**Diffusion of Innovations paradigm**- strengths and limitations**; multiple sources ofinnovation**-farmer innovation, institutional innovation; **farmer participation in technologygeneration and promotion**; strength and limitations	4	
18	**Agricultural Knowledge and Information Systems (AKIS)**; strength and limitations;	2	
19	**Agricultural Innovation Systems (AIS); Redefining Innovation**- Role of Extension and Advisory Services in AIS-From information delivery to intermediation across multiple nodes; Role of brokering; Innovation Platforms, Innovation Management; Strength and weaknesses of AIS.	4	
20	**Rethinking Communication in the Innovation Process**– Network building, support social learning, dealing with dynamics of power and conflict;	2	
Unit 2	**Evolving Extension Approaches**	**09**	
21	**Evolution and features of extension approaches**: Transfer of technology approach; educational approach, farmer participatory extension approach, demand-driven extension,	3	
22	Market led extension (value chain extension), extension for climate smart agriculture, gender sensitive extension, extension for entrepreneurship	2	
23	**Extension systems in different regions**: Asia-Pacific, Europe, Latin America, Australia,North America	2	
24	**Networking for Strengthening EAS**: GFRAS (Global Forum for RuralAdvisory Services) and its regional networks	2	
BLOCK 3	**EXTENSION REFORMS AND POLICY CHALLENGES**	**13**	
Unit 1	**Changes in Governance, Funding and Delivery**		
25	**Reduction in public funding**: public withdrawal from extension provision (partial/full);Examples/Cases	2	
26	**Privatization: Public funding and private delivery**; cost sharing and cost recovery; Examples/Cases	2	
27	**Decentralization of extension services**; Examples/Cases; Lessons from extension reforms in different countries; Extension and Sustainable Development Goals (SDGs)	2	
Unit 2	**Challenges in Managing Pluralistic Extension Systems**		
28 &29	**Pluralism**: Managing pluralism and Co-ordination of pluralistic extension provision; Public private partnerships in extension (including the role of local governments / panchayats and producer organisations); Examples, challenges in co-ordination; Achieving convergence in extension planning and delivery	3	
30	**Financing Extension**: Mobilizing resources for extension:	2	

	public investments, donor support (grants/loans)	
31& 32	**Monitoring and Evaluation of Extension**:Generating appropriate data for Assessment and Evaluation of pluralistic extension; **Strengthening extension policy interface**; generating evidence on impact of extension andpolicy relevant communication	2

RESOURCES

Adolph B. 2011. Rural Advisory Services World wide: A Synthesis of Actors and Issues.GFRAS: Lindau, Switzerland. https://www.g-fras.org/en/knowledge/gfraspublications.html?download=6:rural-advisory-services-worldwide&start=40

Ashok G, Sharma P, Anisha S and Prerna T. 2018. Agriculture Extension System in IndiaReview of Current Status, Trends and the Way Forward. Indian Council for Research onInternational Economic Relations (ICRIER). http://icrier.org/pdf/Agriculture-Extension-System-in-India-2018.pdf

Barber J, Mangnus E and Bitzer V. 2016. Harnessing ICT for agricultural extension. KITWorking Paper 2016:4. https://213ou636sh0ptphd141fqei1-wpengine.netdna-ssl.com/sed/wpcontent/uploads/sites/2/2016/11/KIT_WP2016- 4_Harnessing-ICT-for-agriculturalextension.Pdf

Bentley J, Chowdhury A and David S. 2015. Videos for Agricultural Extension. Note 6.GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau,Switzerland. https://www.g-fras.org/en/good-practice-notes/6-video-for-agriculturalextension.html#SNote1

Bingen RJ and Simpson BM. 2015. Farmer Organizations and Modernizing Extensionand Advisory Services. MEAS Discussion Paper. http://meas.illinois.edu/wpcontent/uploads/2015/04/Bingen-Simpson-2014-FarmerOrganizations-MEAS-Discussion-Paper.pdf

Bitzer V, Wennink B and de Steenhuijsen PB. 2016. The governance of agriculturalextension systems. KIT Working Paper16016:1.http://213ou636sh0ptphd141fqei1.wpengine.netdnacdn.com/sed/wpcontent/uploads/sites/2/2016/03/WPS_1-2016-web.pdf

Bitzer V, Wongtschowski M, Hani M and Blum M. 2016. New directions for inclusivePluralistic Service Systems. In New Directions for Inclusive Pluralistic Service SystemsRome (Italy). FAO. http://www.fao.org/3/a-i6104e.pdf

Burton ES & Kristin D. 2014. Status of Agricultural Extension and Rural AdvisoryServices Worldwide. GFRAS: Lindau, Switzerland. http://www.gfras.org/en/knowledge/gfras-publications.html?download=391:status-of-agriculturalextension-and-rural-advisory-services-worldwide

Christoplos I. 2010. Mobilizing the potential of rural and agricultural extension. Food and Agriculture Organization of the United Nations. Rome. http://www.fao.org/docrep/012/i1444e/i1444e.pdf

Colverson KE. 2015. Integrating Gender into Rural Advisory Services. Note 4. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. https://www.g-fras.org/en/good-practice-notes/integrating-gender-into-rural-advisoryservices.html#SNote1

David S. 2018. Migration and rural advisory services. GFRAS Issues Paper 2. Global Forum for Rural Advisory Services. https://www.g-fras.org/en/knowledge/gfraspublications/category/97-gfras-issues-papers.html?download=856:migration-and-ruraladvisory-services

Davis K and Heemskerk W. 2012. Coordination and Collective Action for Agricultural Innovation Overview Module 1 Investment in Extension and Advisory Services as Part of Agricultural Innovation Systems. In Agricultural Innovation Systems: An Investment Sourcebook. Agricultural and Rural Development. World Bank. © World Bank. http://siteresources.worldbank.org/INTARD/Resources/335807-1330620492317/9780821386842ch3.pdf

FAO. 2016. New directions for inclusive Pluralistic Service Systems. Report of FAO Expert Consultation. Food and Agriculture Organization of the United Nations and Royal Tropical Institute, Rome. http://www.fao.org/3/ai6103e.pdf

FAO.2017. Climate-Smart Agriculture Sourcebook. Available at: http://www.fao.org/3/ai3325e. Pdf

Faure G, Pautrizel L, de Romémont A, Toillier A, Odru M and Havard M. 2015. Management Advice for Family Farms to Strengthen Entrepreneurial Skills. Note 8. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. https://www.g-fras.org/en/good-practice-notes/management-advice-for-familyfarms-to-strengthen-entrepreneurial-skills.html#SNote8

Francis J, Mytelka L, Van Huis A and Röling N (eds.). 2016. Innovation Systems: Towards Effective Strategies in support of Smallholder Farmers. Technical Centre for Agricultural and Rural Cooperation (CTA) and Wageningen University and Research (WUR)/Convergence of Sciences Strengthening Innovation Systems (CoS-SIS), Wageningen. https://publications.cta.int/media/publications/downloads/1829_PDF.pdf 17

GFRAS. 2012. Building Knowledge Systems in Agriculture Five Key Areas for Mobilising the Potential of Extension and Advisory Services. Global Forum for Rural Advisory Services. http://www.fao.org/uploads/media/1_gfras_positionpaper_final2_websmallpdf%20com%20(1).pdf

GFRAS. 2015. Producer organisations in rural advisory services: Evidence and experiences. Position Paper. Lindau: Global Forum for Rural Advisory Services. http://www.g-fras.org/en/593-producer-organisations-in-rural-advisory-servicesevidence-andexperiences.Html

GFRAS. 2016. Five Key Areas for Mobilising the Potential of Rural Advisory Services. GFRAS Brief 1. Global Forum for Rural Advisory Services. https://www.gfras. org/en/knowledge/gfras-publications.html?download=4:five-key-areas-for-mobilisingthe-potential-of-rural-advisory-services

GFRAS.2016. The New Extensionist Learning Kit. http://g-fras.org/en/knowledge/newextensionist-learningkit-nelk.html#module-1-introduction-to-the-new-extensionist

GRFAS. 2014. Policy Compendium. http://www.g-fras.org/en/policy-compendium.html

Gwyn EJ and Garforth C. nd. The history, development, and future of agricultural extension. FAO. Rome. http://www.fao.org/docrep/W5830E/w5830e03.htm

Jennings JR, Packham RG and Woodside D. 2011. Shaping change: natural resource

management, agriculture and the role of extension. Australasia Pacific Extension Network. http://www.apen.org.au/shaping-change

Leeuwis C with A W van den Ban. 2004. Communication for rural innovation: Rethinking agricultural extension. John Wiley & Sons.

Magdalena Blum and SanneChipeta. 2016. Innovative Financing Mechanisms for Demand-driven Agricultural Advisory Services. Gfras good practice note for extension and advisory services 21. Global Forum for Rural Advisory Services. https://www.gfras. org/en/good-practice-notes/20-innovative-financing-mechanisms.html#SNote8

Manfre C, Rubin D and Nordehn C. 2017. Assessing How Agricultural Technologies can Change Gender Dynamics and Food Security Outcomes. A three part toolkit. Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES). http://www.culturalpractice.com/wp-content/uploads/Introduction-to-the-Toolkit-Final-10_17.pdf

Mittal N, Sulaiman RV and Prasad RM. 2016. Assessing capacity needs of Extension and Advisory Services: A Guide for Facilitators. Agricultural Extension in South Asia (AESA). http://crispindia.org/wpcontent/uploads/2015/09/Facilitators-Guide-Final-LR.pdf

Posthumus H and Wongtschowski M. 2014. Innovation Platforms. Note 1. GFRAS good practice note for extension and advisory services. GFRAS: Lindau, Switzerland. https://www.g-fras.org/en/good-practice-notes/innovation-platforms.html#SNote1

Rajalahti R, Janssen W and Pehu E. 2008. Agricultural innovation systems: From diagnostics toward operational practices. Agriculture & Rural Development Department, 18

World Bank. https://agrilinks.org/sites/default/files/resource/files/ARDDiscussionPaper38.pdf

Rao S. 2015. Using Radio in Agricultural Extension. Note 18. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. https://www.gfras. org/en/good-practice-notes/using-radio-in-agricultural-extension.html#SNote8

Rivera W and Zijp W. 2002. Contracting for Agricultural Extension-International Case Studies and Emerging Practices. CABI Publishing.

Saravanan R and Suchiradipta B. 2015. mExtension – Mobile Phones for Agricultural Advisory Services. Note 17. Gfras good practice note for extension and advisory services. GFRAS: Lindau, Switzerland. https://www.g-fras.org/en/good-practicenotes/mextension.html#SNote17

Saravanan R, Suchiradipta B, Meera SN, Kathiresan C and Anandaraja N. 2015. Web Portals for Agricultural Extension and Advisory Services. Note 16. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. https://www.g-fras.org/en/good-practice-notes/16-web-portals-for-agricultural-extension-andadvisory-services.html#SNote8

Saravanan R, Sulaiman RV, Davis K and Suchiradipta B. 2015. Navigating ICTs for

Extension and Advisory Services. Note 11. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. https://agrilinks.org/sites/default/files/resource/files/gfras-ggpnote11_ navigating_icts_for_ras_1.pdf

Sulaiman RV 2015. Agricultural Innovation Systems. Note 13. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. https://www.gfras. org/en/good-practice-notes/agricultural-innovation-systems.html#SNote8

Sulaiman RV and Davis K. 2012. The New Extensionist: Roles, strategies, and capacities to strengthen extension and advisory services. In Lindau, Switzerland: Global Forum for Rural Advisory Services. http://www.g-fras.org/en/157-thenew-extensionist

Suvedi M and Kaplowitz MD. 2016. What Every Extension Worker Should Know: Core Competency Handbook. Michigan State University. Department of Community Sustainability. https://agrilinks.org/library/what-every-extensionworker-should-know-corecompetency-Handbook

Swanson BE and Rajalahti R. 2010. Strengthening Agricultural Extension and Advisory Systems: Procedures for Assessing. Transforming, and Evaluating Extension Systems. Agriculture and Rural Development Discussion Paper; No. 45. World Bank, Washington, DC. © World Bank.http://siteresources.worldbank.org/INTARD/Resources/Stren_combined_web.pdf

Swanson BE. 2008. Global Review of Good Agricultural Extension and Advisory Service Practices. Food and Agriculture Organization of the United Nations. Rome. http://www.fao.org/docrep/pdf/011/i0261e/i0261e00.pdf
19

Terblanche S and H Ngwenya. 2017. Professionalisation of Rural Advisory Services. Note 27. GFRAS Global Good Practice Notes for Extension and Advisory Services. GFRAS: Lausanne, Switzerland. https://www.g-fras.org/en/good-practice-notes/27-professionalisation.html#SNote27

World Bank. 2006. Enhancing Agricultural Innovation: How to Go Beyond the Strengthening of Research Systems. Washington, DC: World Bank. © World Bank. https://openknowledge.worldbank.org/handle/10986/7184

WEBSITES
AESA-Agricultural Extension in South Asia http://www.aesanetwork.org/
FAO -Food and Agricultural Organisation (Research and Extension) http://www.fao.org/research-and-extension/en/
GFRAS- Global Forum for Rural Advisory Services http://www.g-fras.org/en/
INGENEAS -Integrating Gender and Nutrition within Agricultural Extension Services https://ingenaes.illinois.edu/
IFPRI- International Food Policy Research Institute (Extension) http://www.ifpri.org/topic/agricultural-extension
KIT- Royal Tropical Institute (KIT)-Sustainable Economic Development https://www.kit.nl/sed/
WUR-Wageningen University and Research Research (Knowledge, Technology and Innovation Group (KTI)) https://www.wur.nl/en/Research-Results/Chair-groups/Social-Sciences/KnowledgeTechnology-and-Innovation-Group.htm

Credits: 3(2+1)

BLOCK 1: FOUNDATIONS OF BEHAVIOUR CHANGE

Unit 1: Foundations of Human Behaviour

Human behaviour – Meaning, importance and factors influencing human behaviour; Biological bases of human behaviour – Nervous system, brain, endocrine system and genes; Individual variations – intelligence, ability and creativity– foundations and theories, personality and temperament - foundations, approaches, theories of personality, measuring personality (traits, locus of control, self-efficacy; Personal, social and moral development – meaning, concepts – self-concept, self-esteem and self-worth and theories. Motivation – foundations, approaches, theories, managing human needs and motivations; perceiving others – impression, attitude, opinions; Emotions - foundations, types and functions, measuring emotional intelligence

BLOCK 2: COGNITIVE PROCESSES AND LEARNING

Unit 1: Cognitive Processes affecting Human Behaviour

Sensory organs and their role cognition; Cognitive processes – Attention, perception, remembering and forgetting, knowledge and expertise – foundations and theories; Principles and processes of perception; Consciousness – meaning, types, sleep and dreams; Learning and Memory – Memory - meaning, types and mechanisms of storage and retrieval of memories in the Human brain; Complex cognitive processes - Concept formation, Thinking, Problem solving and transfer – foundations, theories and approaches

Unit 2: Information Processing

Information processing – meaning, principles; Models of information processing – Waugh and Norman model of primary and secondary memory; Atkinson and Shiffrin's stage model of memory; other models including blooms taxonomy and Sternberg's Information Processing Approach; Attention and perception – meaning, types, theories and models; Consciousness

Unit 3: Learning

Learning – foundations, approaches and theories; Cognitive approaches of learning – meaning, principles theories and models; Memory – foundations, types ; Behavioural approaches of learning – foundations and theories - classical conditioning, operant conditioning, applied behaviour analysis; Social cognitive and constructivist approaches to learning – foundations and theories – social cognitive theory, Self-regulated learning; learning styles – meaning, types and applications in learning

Unit 4: Judgement, Choice and Decision-making

Human judgement – meaning, nature, randomness of situations, theories and models; Choice – meaning, criteria for evaluating options; theories and models of human choice; Choice architecture; Decision-making – Meaning, problem analysis; steps and techniques of decision-making under different contexts

BLOCK 3: HUMAN BEHAVIOUR IN THE SOCIETY

Unit 1: Attitudes and Influence

Attitudes - meaning, assumptions, types, theories and models of attitude formation; methods of changing attitudes, Relating to others - liking, attraction, helping behaviour, prejudice, discrimination and aggression; Liking / affect – meaning, types and theories; Attraction – meaning, types and theories; Persuasion – meaning, theories and techniques; Social influence and groups – conformity, compliance and obedience

Unit 2: Social Judgement, Social Identity and Inter-Group Relations

Social judgement – meaning, frame of reference, stereotyping; The judgement of attitude models; Attribution – meaning, theories; Rational decision making; Social identify – meaning, types; assessment; Groups – meaning, types, group processes; sustainability of groups; Inter group processes and theories social learning

PRACTICALS

1. Understanding perception – Attentional Blink and Repetition Blindness exercise
2. Understanding attention - Testing selective attention capacity and skills and processing speed ability through Stroop test
3. Hands-on experience in the techniques for assessing creative thinking – divergent and convergent thinking
4. Lab exercise in applying Maslow's need hierarchy to assess motivation
5. Learning - Classical conditioning and operant conditioning
6. Assessing learning styles through Barsch and Kolb inventories
7. Practical experience in building self-esteem
8. Assessment of emotional intelligence
9. Exercises in problem solving
10. Exercises in visual perception
11. Measuring self-concept using psychometric tools
12. Experiment on factors influencing information processing
13. Assessment of attitudes
14. Hands on experience in methods of persuasion
15. Field experience in assessing social judgement
16. Simulation exercise to understand decision-making under different situations
17. Exercise in rational decision-making.

TEACHING METHODS/ACTIVITIES
- Lecture cum discussion
- Class exercises
- Group Presentation

Suggested Readings

Eiser J, Richard. 2011. Social Psychology: Attitudes, Cognition and Social Behaviour. Cambridge: Cambridge University Press.(First Edition, 1986))

Eysenck MW and Keane M T. 2010.Cognitive psychology: A student's handbook. Sixth Edition, Hove: Psychology Press.

Feldman RS. 2008. Essentials of understanding psychology (7th ed.). Boston: McGraw-Hill.

Gilovich T, Keltner D, and Nisbett RE. 2011. Social psychology. New York: W.W. Norton & Co

Moreno R. 2010.Educational Psychology. Hoboken, NJ: John Wiley & Sons Inc.

Nevid JS. 2012. Essentials of psychology: Concepts and applications Belmont, CA: Wadsworth, Cengage Learning.

Rachlin H. 1989. Judgment, decision, and choice: A cognitive/behavioral synthesis. New York: W.H. Freeman.

Credits: 3(2+1)

Objectives
By the end of the course students will be able to

- Understand the biological and cognitive processes determining human behavior
- Understand the process of learning under different context
- Develop competencies in influencing the human decision process in various contexts
- Design effective strategies to influence attitude and behaviour
- Build capacities to understand the fundamental psychological processes which guide human behaviour at individual, group and community levels in specific contexts, to develop sound extension strategies.
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Theory

Unit No.	Lecture No.	Topic	Weightage
		Block 1: Foundations of Behaviour Change	
Unit1: Foundations of Human Behaviour	1	Human behaviour – Meaning, importance and factors influencing human behaviour.	2
	2	Biological bases of human behaviour – Nervous system, brain, endocrine system and genes.	3
	3	Individual variations – Intelligence, ability and creativity– foundations and theories	3
	4	Personality and temperament - Foundations, approaches, theories of personality, measuring personality (traits, locus of control, self-efficacy)	3
	5	Personal, social and moral development – Meaning, concepts – self-concept, self-esteem and self-worth and theories.	2
	6	Motivation –Foundations, approaches, theories, managing human needs and motivations., perceiving others – impression, attitude, opinions.	3
	7	Emotions - Foundations, types and functions, measuring emotional intelligence	3
		Block 2: Cognitive Processes and Learning	
Unit 1: Cognitive Processes	8	Sensory organs and their role cognition; Cognitive processes – Attention, perception, remembering and forgetting	3

affecting Human Behaviour	9	knowledge and expertise – Foundations and theories; Principles and processes of perception	3
	10	Consciousness – Meaning, types, sleep and dreams;	2
	11	Learning and Memory – Memory - Meaning, types and mechanisms of storage and retrieval of memories in the Human brain;	3
	12	Complex Cognitive Processes - Concept formation, Thinking, Problem solving and transfer – foundations, theories and approaches	3
Unit 2: Information Processing	13-14	Information Processing – Meaning, principles; Models of information processing – Waugh and Norman model of primary and secondary memory; Atkinson and Shiffrin's stage model of memory; other models including blooms taxonomy and Sternberg's Information Processing Approach	5
	15	Attention and Perception – meaning, types, theories and models; Consciousness;	3
Unit3: Learning	16	Learning – Foundations, approaches and theories	2
	17	Cognitive Approaches of Learning – Meaning, principles, theories and models;	3
	18	Memory – Foundations, types	2
	19	Behavioural Approaches of Learning – foundations and theories - classical conditioning, operant conditioning, applied behaviour analysis	3
	20	Social Cognitive and Constructivist Approaches to Learning – Foundations and theories – social cognitive theory, Self-regulated learning; learning styles – meaning, types and applications in learning	4
Unit:4 Judgement, Choice and Decision-making	21	Human Judgement – Meaning, nature, randomness of situations, theories and models	3
	22	Choice – Meaning, criteria for evaluating options; theories and models of human choice; Choice architecture	3
	23	Decision-making – Meaning, problem analysis; steps and techniques of decision-making under different contexts	2

		Block 3: Human Behaviour in the Society	
Unit 1: Attitudes and Influence	24	Attitudes - Meaning, assumptions, types, theories and models of attitude formation;	3
	25	Methods of changing attitudes relating to others - liking, attraction, helping behaviour, prejudice, discrimination and aggression; Liking / affect – meaning, types and theories	3
	26	Attraction – Meaning, types and theories; Persuasion – meaning, theories and techniques	3
	27	Social influence and groups – conformity, compliance and obedience	2
Unit 2: Social Judgement, Social Identity and Inter-Group Relations	28	Social Judgement – Meaning, frame of reference, stereotyping; The judgement of attitude, models;	2
	29	Attribution – Meaning, theories; Rational decision making; Social identify – Meaning, types; assessment	2
	30	Groups – Meaning, types, group processes; sustainability of groups; Inter group processes and theories, social learning	2

Teaching Schedule and Lesson Plan
PG Level
Credits: 3(2+1)
Course Code: EXT-503
Title: ORGANISATIONAL BEHAVIOR AND DEVELOPMENT

WHY THIS COURSE?

In changing and competitive world, the survival of any organization is dependent on its ability to adjust to the new challenges, adapt its structure and develop the competencies needed among its staff. This course is designed to understand the theory and practice relating to the processes of organizational behavior, development and change. It attempts to bring about change in the different levels of the organization (the individual, group and organization) using a wide variety of interventions.

AIM OF THIS COURSE

- To understand the theory and practice relating to the processes of organizational behavior, development and change.
- To develop insight and competence in diagnostic and intervention processes and skills for initiating and facilitating change in organizations.
- To gain necessary self-insight, skills in facilitation, organizational development (OD) skills, group process and techniques, to become an effective change agents and OD consultants.
- To understand the behavior of individuals and small groups in organization with special focus on beliefs, attitudes and values, human inference - attribution, self concept, motivation, active listening, interpersonal communication, conflicts management.

BLOCK No.	Lecture No	Topic	Weightage	
1. ORGANIZATIONAL BEHAVIOR	**Unit 1: Basics of Organization**			
	1	Introduction to organizations-concept and characteristics of organizations; Typology of organizations;	2	6
	2,3	Theories of organizations: nature of organizational theory, Classical theories, Modern management theories, System Theory; Criticisms and lessons learnt/analysis	4	
	Unit 2: Basics of Organizational Behaviour			
	4	Concepts of Organisational Behaviour, Scope, Importance,	2	4
	5	Models of Organisational Behaviour	2	
	Unit 3: Individual Behaviour in Organizations			
	6	Introduction, Self-awareness, Perception and Attribution, Learning	3	11
	7	Systems approach to studying organization needs and motives – attitude, values and ethical behavior, Personality	4	
	8	Motivation-Concept & Theories, Managing motivation in organizations	4	
	Unit 4: Group Behaviour in Organization			
	9	Foundations of group, group behaviour and group dynamics; Group Development and Cohesiveness, Group Performance and Decision Making, Intergroup Relations;	3	13
	10	Teams in Organizations-Team building experiential exercises	2	
	11	Interpersonal Communication and Group;	2	
	12,13	Leadership: Meaning, types, Theories and Perspectives on Effective Leadership, Power and Influence, managing Conflict and Negotiation skills	4	
	14	Job/stress management, decision-making, problem-solving techniques	2	
	Unit 5: Productive Behaviour and Occupational Stress			
	15	Productive behaviour - Meaning, dimension;	2	12
	16	Job analysis and Job performance – meaning, dimensions, determinants and measurement;	2	
	17	Job satisfaction and organizational commitment - meaning, dimensions and measures roles and role clarity;	3	
	18	Occupational stress – meaning, sources, theories and models, effects, coping mechanism, effects and management;	3	
	19	Occupational stress in farming, farmer groups/ organizations, research and extension organizations	2	
	Unit 6: Organizational System			
	20	Organizations Structure- Need and Types, Line & staff, functional, committee, project structure organizations, centralization & decentralization, Different stages of growth and designing the organizational structure;	4	9

	21	Organizational Design-Parameters of Organizational Design, Organization and Environment, Organizational Strategy, Organization and Technology, Power and Conflicts in Organizations; Organizational Decision-Making;	3	
	22	Organizational Culture vs Climate; Organizational Change; Organizational Learning and Transformation	2	
2. ORGANISATIONAL DEVELOPMENT	**Unit 1: Overview of Organizational Development**			6
	23	Concept of Organizational Development, Importance and Characteristics, Objectives of OD,	3	
	24	History and Evolution of OD, Implications of OD Values	3	
	Unit 2: Managing the Organizational Development Process			
	25	Basic Component of OD Program-Diagnosis-contracting and diagnosing the problem, Diagnostic models, open systems, individual level group level and organizational level diagnosis;	3	8
	26	Action-collection and analysis for diagnostic information, feeding back the diagnosed information and interventions;	2	
	27	Program Management- entering OD relationship, contracting, diagnosis, feedback, planned change, intervention, evaluation	3	
	Unit 3: Organizational Development Interventions			
	28	Meaning, Importance, Characteristics of Organization development Interventions,	2	5
	29	Classification of OD Interventions-Interpersonal interventions, Team Interventions, Structural Interventions, Comprehensive Interventions	3	
	Unit 4: Organizational Development Practitioner or Consultant			
	30	Who is OD consultant? Types of OD consultants and their advantages, qualifications,	2	6
	31	Comparison of traditional consultants Vs. OD consultants,	2	
	32	Organizational Development process by the practitioners skills and activities.	2	
			80	**80**

RESOURCES

Bhattacharyya DK. 2011. Organizational Change and Development, Oxford University Press.

Hellriegel D, Sloccum JW and Woodman. 2001. Organizational Behaviour. Cincinnati, Ohio : South-Western College Pub.

Luthans F. 2002. Organizational Behaviour. Tata McGraw-Hill, New York

Newstrom JW and Davis K. 2002. Organizational Behaviour: Human behaviour at Work. Tata-McGraw Hill, New Delhi.

Peter MS. 1998. The Fifth Discipline: The Art and Practice of Learning Organization. Random House, London.

Pradip NK. 1992. Organizational Designs for Excellence.Tata McGraw Hill, New Delhi.

Shukla, Madhukar. 1996. Understanding Organizations. Prentice Hall of India, New Delhi.

Stephens PR and Timothy AJ. 2006. Organizational Behaviour, 12th Edition. Prentice Hall Pub.

Thomas GC and Christopher GW. 2013. Organizational development and change, 10th edition, South-Western college publishing.

Wendell LF and Cecil HB. 1999. Organizational Development: Behavioural science interventions for organization improvement, Pearson. 368 pp.

I. Course Title : Research Methodology in Extension
II. Course Code : EXT 504
III. Credit Hours : 2+1
IV. Why this course?
Growth of any discipline is directly proportional to the creation of knowledge in that discipline. Extension research is the backbone of extension discipline. Extension research is a unique social science inquiry where research ideas are gathered from the field problems and put through a systematic cycle of objective investigations that result in significant solutions. Apart from developing theories and models that advance scientific knowledge, extension research should also provide new insights for improving extension policy and practice. As extension is a field oriented discipline seeking to improve the welfare of its stakeholders, the extension professionals require critical competencies in conducting empirical research for developing sound extension models, methods and tools.

V. Aim of the course
This course aimed to create a workforce which has sound fundamental knowledge Social Sciences: Agricultural Extension Education and critical competencies in planning, conducting and applying behavioural research for developing quality extension models, methods and tools.
The course is organized as follows:

No.	Blocks	Units
1.	Introduction to behavioural research	1. Nature of Behavioural Research
		2. The Behavioural Research Process
2.	Steps in behavioural research process	1. Formulating a Research Problem
		2. Reviewing the Literature
		3. Identifying Variables and Hypotheses
		4.Formulating Research Designs, Methods and Tools
		5. Selecting Sample
		6. Collecting Data
		7. Analysing and Interpreting the Data
		8. Reporting and Evaluating Research

VI. Theory
Teaching Schedule:

Block No.	Lecture No.	Topic	Weightage	
1: **Introduction To Behavioural Research**	**Unit 1: Nature of Behavioural Research**			
	1	Methods of knowing; Science and scientific method; Behavioural research – Concept, Definition, aim, goals and objectives; Characteristics and Paradigms of research; Types of behavioural research based on applications, objectives and inquiry	5	8
	2	Types of knowledge generated through research – historical, axiological, theoretical and conceptual knowledge, prior research studies, reviews and academic debate; Role of behavioural research in extension; Careers in behavioural research	3	
	Unit 2: The Behavioural Research Process			
	3	Basic steps in behavioural research – Formulating a Research Problem; Reviewing the Literature; Identifying the variables and hypotheses; Formulating research designs, methods and tools	4	7
	4	Selecting sample; Collecting data; Analyzing and Interpreting the Data; Reporting and Evaluating Research; Skills needed to design and conduct research; Writing research proposals	3	
2: **Steps in Behavioural Research Process**	**Unit 1: Formulating a Research Problem**			
	5	The research problem and research topic - definitions; Importance of formulating a research problem; Sources of research problems; Characteristics of a good research problem;	3	11
	6	Research problems in quantitative and qualitative research; Steps in formulating a research problem; Strategies for writing research problem statement; Research purpose statement	4	
	7	Research questions – Types, Criteria for selecting research questions, techniques for narrowing a problem	4	

		into a research question; Objectives - Meaning, types and criteria for judging the objectives.		
	Unit 2: Reviewing the Literature			
	8	Review-meaning and importance; Types of literature review – Context, Historical,Integrative, methodological, self-study and theoretical; Literature review for quantitative and qualitative studies	4	7
	9	Steps in conducting literature review – Identify key terms, locate literature, critical evaluation and selection; organising literature and writing literature review	3	
	Unit 3: Identifying Variables and Hypotheses			
	10	Developing theoretical, conceptual, empirical frameworks; Approaches for identifying concepts, constructs and variables; Role of theory in behavioural research; Steps in identifying variables – Domain, Concepts, Constructs, Dimensions; Indicators; Variables, Definitions, premises, propositions and hypotheses	5	10
	11	Techniques of identifying concepts, constructs and variables - Types of concepts; Types of variables–causal relationship, the study design; and the unit of measurement	2	
	12	Types of definitions-Types of propositions and hypotheses. Characteristics of good hypotheses; Measurement – Meaning, levels of measurement – nominal, ordinal, interval and ratio; Criteria for choosing measurement levels for variables.	3	
	Unit 4: Formulating Research Designs, Methods and Tools			
	13,14	Research designs – Definition, purpose and functions; Research Design as Variance Control - MAXMINCON Principle; Criteria for selecting a	5	12

		suitable Research Design; Classification of research designs: Quantitative designs - experimental, descriptive, comparative, correlational, survey, ex-post facto and secondary data analysis; Qualitative designs - ethnographic, grounded theory, phenomenological and Narrative research		
	15	Mixed method designs – Action research design; Translational research; Elements of research design - Research strategies, Extent of researcher interference, Study setting, Unit of analysis and Time horizon. Sources of errors while specifying research designs. Internal and external validity; Choosing right research design; Triangulation - Importance in behavioural research, Types of triangulation	5	
	16	Research methods: Designing research Instruments – questionnaires, interview schedules; tests – knowledge tests, behaviour performance tests; scales – scales and indexes, checklists, focus groups; Steps in developing and using research methods and tools; participatory rural appraisal	2	
Unit 5: Selecting Sample				
	17	Sampling - population, element, sample, sampling unit, and subject; Sampling strategies for quantitative and qualitative research; Principles of sampling	3	12
	18	Factors affecting the inferences drawn from a sample; Types of sampling, Methods of drawing a random sample, Sampling with or without replacement	3	
	19	Types of sampling- Probability Sampling - Simple random sampling, Cluster sampling, Systematic sampling, Stratified random sampling and Unequal probability Sampling; Nonprobability Sampling - Reliance of	4	

		available subjects, Purposive or judgmental sampling, accidental sampling, expert sampling, Snowball sampling, and Quota sampling		
	20	Sample size requirements for quantitative and qualitative studies. Methods for estimating sample size; Generalisation – Importance, Types of generalisations.	2	
Unit 6: Collecting Data				
	21	The process of collecting data – Selection, training, supervision, and evaluation of field investigators; Online data collection; Errors and biases during data collection.	3	10
	22	Testing goodness of measures through item analysis - Reliability and validity; Types of validity – Content validity: Face and content validity, Criterion-related validity: concurrent and predictive validity, Construct validity: convergent, and discriminant validity, factorial validity, and nomological validity	3	
	23	Types of reliability– Test-Retest, Parallel forms, Inter-item consistency reliability, Split-half reliability. Factors affecting the validity and reliability of research instruments, Strategies for enhancing validity and reliability of measures. Validity and reliability in qualitative research	4	
Unit 7: Analyzing and Interpreting the Data				
	24	Data coding, exploration and editing; Methods of data processing in quantitative and qualitative studies	3	20
	25	Quantitative data analysis - parametric and non-parametric statistical analyses; Parametric analysis – Descriptive and inferential statistics	5	
	26	Hypothesis testing - Type I and Type II errors	3	
	27	Concepts in hypothesis testing - Effect Size, á, â, and Power, P Value	2	
	28	Multivariate data analysis – regression,	2	

		factor analysis, cluster analysis, logistic regression and structural equation modelling.		
	29	Guidelines for choosing appropriate statistical analysis; Statistical packages for data analysis	3	
	30	Methods of interpreting data and drawing inferences - The Ladder of Inference Methods of communicating and displaying analysed data.	2	
Unit 8: Reporting and Evaluating Research				
	31	Writing reports and research publications	2	3
	32	Evaluation Methodology	1	

VII. Practicals
• Selecting a research problem and writing problem statement
• Narrowing down research problem to purpose, research questions and objectives
• Choosing, evaluating and reviewing research literature
• Selection of variables through construct conceptualization and defining variables
• Choosing research design based on research problem
• Choosing right sampling method and estimating sample size
• Developing research methods and tools – questionnaires, interview schedule, checklists and focus group guides
• Writing a research proposal
• Field data collection using research methods and tools
• Testing reliability and validity of research instruments
• Hands on experience in using SPSS for coding, data exploration, editing, analysis and interpretation Formulation of secondary tables based on objectives of research
• Writing report, writing of thesis and research articles
• Presentation of reports

VIII. Teaching methods/activities
– Lecture cum discussion
– Class exercises
– Assignment (Reading/Writing)
– Student's Book/Publication Review
– Student presentation
– Group Work
– Research Report

IX. Learning outcome
– Understand the concepts, paradigms, approaches and strategies of behavioural research
– Enable to choose research design, methods and tools suitable for the research problem
– Design research instruments skilfully and conduct research in an objective and unbiased way
– Analyse the data through appropriate analytical methods and tools and derive meaningful interpretations

X. Suggested Reading

Babbie E. 2008. *The basics of social research*. 4th ed. Belmont, CA, USA; Thompson Wordsworth.

Creswell JW. 2009. *Research design: Qualitative, quantitative, and mixed methods approaches*. Third edition. Thousand Oaks: Sage Publications.

Creswell JW. 2012. *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Fourth edition. Boston, MA: Pearson.

Kerlinger FN and Lee HB. 2000. *Foundations of Behavioral Research*. Orlando, FL: Harcourt College Publishers.

Kothari CR.2009. *Research Methodology, Methods and Techniques.* New Age International Publishers.

Kumar R. 2014. *Research Methodology: A Step- by- Step Guide for Beginners*. Fourth. Edition. Thousand Oaks, California: Sage Publications.

Malhotra NK. 2010. *Marketing research: An applied orientation*. Sixth Edition. Upper Saddle River, NJ: Prentice Hall.

NeumanWL. 2006. *Social Research Methods: Qualitative and Quantitative Approaches.* Toronto: Pearson.

Sekaran U and Bougie R. 2013. *Research Methods for Business A Skill-Building Approach*. 6th Edition, Wiley, New York.

Sendhil R, Kumar A, Singh S, Verma A, Venkatesh K and Gupta V. 2017. *Data Analysis Tools and Approaches (DATA) in Agricultural Sciences*. e-Compendium of Training-cum-Workshop organised at the ICAR-IIWBR during March 22-24, 2017. pp 1-126.

Sinha SC and Dhiman AK. 2002. *Research Methodology.* ESS ESS Publications.

Sivakumar PS, Sontakki BS, Sulaiman RV, Saravanan R and Mittal N. (eds). 2017. *Good Practices in Agricultural extension Research*. Manual on Good Practices in Extension Research and Evaluation. Agricultural Extension in South Asia. Centre for Research on Innovation and Science and Policy (CRISP), Hyderabad. India.

Sivakumar PS and Sulaiman RV. 2015. *Extension Research in India-Current Status and Future Strategies*. AESA Working Paper 2. Agricultural Extension in South Asia.http://www.aesanetwork.org/aesa-working-paper-2-on-extension-research-in-india-currentstatus-and-future-strategies-p-sethurman-sivakumar-and-rasheed-sulaiman-v-december-2015/

Wilkinson TS and Bhandarkar PC.1993. *Methodology and Techniques of Social Research.* Himalaya Publ. Home.

(Red color indicate new material added)

Aim of the course

- To understand the concepts of training, capacity building, capacity development and human resource development in the context of roles and responsibilities of extension professionals
- To discuss capacity development- approaches, strategies, needs assessment and methods / tolls
- To help you devise, organize, implement and evaluate capacity development programmes

Theory

Block 1: Introduction to Capacity Development

Unit 1: Capacity Development–An Overview

Training, capacity building, capacity development and HRD-Meaning and differences; Need and principles of capacity development; Types and levels of capacities - Institutional capacities (include the rules, regulations and practices that set the overarching contextual environment), Organizational capacities (how various actors come together to perform given tasks), Individual capacities (technical, functional and leadership skills). Types of capacity building - Based on structure (structured, semi-structured &unstructured), Based on context (orientation, induction and refresher), and other categories (online, Webinar, distance etc.). Components of capacity development; Capacity development cycle.

Unit 2: Capacity Development- Approaches and Strategies

Capacity Development Dilemma- Theory versus Practice, Trainee versus Task, Structured versus Unstructured, Generic and Specific; Approaches in Capacity Development -Informative approach, Participatory approach, Experimental approach/ Experiential, Performance based approach; Capacity Development Strategies - Academic strategy, Laboratory strategy, Activity strategy, Action strategy, Personal development strategy, Organizational development strategy

Unit 3: Planning and Organization of Capacity Development Programmes

Steps in Designing and Planning of Capacity Development- Step 1. Select the participants, Step 2. Determine the participants' needs, Step 3. Formulate goal and objectives, Step 4. Outline the content, Step 5. Develop instructional activities, Step 6. Prepare the design, Step 7. Prepare evaluation form, Step 8. Determine follow-up activities; Organising capacity development programme; Operational arrangements at different stages- Before the programme, During the programme, Middle of the programme, At the end of the programme, After the programme, Follow up; Stakeholders' responsibilities.

Block 2: Capacity Development Needs Assessment

Unit 1: Planning and Organization of Capacity Development Programmes

Concept of Need Assessment; Approaches in Need Analysis- Performance Analysis, Task Analysis, Competency Study; Needs Survey.

Unit 2: Capacity Development Needs Assessment Methods

Data Collection Methods in Identifying Needs - Rational Methods (Observation, Informal talks, Complaints, Comparison, Analysis of report, Opinion poll, Buzz session, Analysis of the new programme), Empirical Methods (Job analysis, Performance evaluation, Checklist or Questionnaire Method, Tests, Critical Incident Technique, Card Sort Method, Focus Group Discussion, Interview, SWOT Analysis); Information and Skills required in Need Analysis; Identification of Needs through Task Analysis - Task identification, Task Analysis, Gap Analysis.

Block 3: Capacity Development Institutions and Management

Unit 1: Capacity Development Institutions

Capacity Developer (Trainer): Meaning and concept; Types of Capacity Developers (regular, ad-hoc, part time, guest and consultants); Roles of Capacity Developer (explainer, clarifier, supporter, confronter, role model, linker, motivator, translator/ interpreter, change agent); Good Capacity Developer – Qualities, skills and roles Qualities, Skills (Intrapersonal & Inter personal), Roles (Manager, Strategist, Task Analyst,

Media Specialist, Instructional Writer, Marketer, Facilitator, Instructor, Counsellor, Transfer Agent, Evaluator); Capacity Development Centres and Locations; Organisation's Role in Capacity Development.

Unit 2: Capacity Development Project Formulation

Project Proposal: Concept and Meaning; Steps in Project Formulation- Review of past proposals, Consulting experts, consultants, and previous organizers, Review past project evaluation reports, Interact with the prospective beneficiaries; Format for Writing Project Proposal (LFA).

Block 4: Capacity Development Process and HRD

Unit 1: Capacity Development Methods and Tools

Capacity Development Methods –Lecture, Discussion, Syndicate, Seminars, Conference, Symposium, Role Play, Case study, Programmed Instruction, T - group/ Laboratory methods; Factors Determining Selection of Methods - Capacity development objectives, subject matter, categories of participants, and the available resources like time, location, budget; Capacity Development Aids.

Unit 2: Evaluation

Capacity Development Programme Evaluation - Meaning & Importance; Purpose of Evaluation; Principles of Evaluation; Types of Evaluation – Formative, Summative, Kirkpatrick's four levels of evaluation; Process of Evaluation- Evaluation at the beginning, Evaluation during the programme, Evaluation at the end; Use of evaluation findings; Statistical Tools for evaluation.

Unit 3: Impact Assessment

Impact Assessment- Meaning, Need, Features, Benefits, Concepts; Indicators for Impact Assessment - Direct indicators, Indirect or proxy indicators, Quantitative indicators, Qualitative indicators, Result chain / hierarchy of indicators; Methods of Impact Evaluation- Learning retention of participants (KOSA), Impact on the job performance, Impact on organizational effectiveness, Impact on stakeholder's competency.

Unit 4: Human Resource Development

HRD: Meaning, Importance and Benefits; Types of HRD Systems & Sub-systems Career system (Manpower planning, Recruitment, Career planning, Succession planning, Retention), Work system (Role analysis, Role efficacy, Performance plan, Performance feedback and guidance, Performance appraisal, Promotion, Job rotation, Reward), Development system (Induction, Training, Job enrichment, Self-learning mechanisms, Potential appraisal, Succession development, Counselling, Mentor system), Self-renewal system (Survey, Action research, Organisational development interventions), Culture system (Vision, mission and goals, Values, Communication, Get together and celebrations, Task force, Small groups); Components of HRD System - Performance Appraisal, Potential Appraisal, Task System, Development System, Socialisation System, Governance; Functions of HRD-Organisational Development, Career Development, Capacity Development.

Practicals

- Capacity development needs assessment exercise
- Capacity development project formulation exercise
- Planning organizing and conducting an extension capacity development programme
- Designing a programme
- Writing learning objectives
- Developing objectives into curriculum
- Training plan
- Organizing capacity development workshop
- Evaluation with pre- and post-training tests
- Training methods – Practicing each method mentioned in contents as group exercise

EXT 505   Capacity Development 2+1

LECTURE SCHEDULE

Theory

Sr. No.	Topic	No. of Lecture (s)
	Block 1: Introduction to Capacity Development	
	Unit 1: Capacity Development–An Overview	
1.	Training, capacity building, capacity development and HRD-Meaning and differences	1
2.	Need and principles of capacity development	
3.	Types and levels of capacities - Institutional capacities (include the rules, regulations and practices that set the overarching contextual environment), Organizational capacities (how various actors come together to perform given tasks), Individual capacities (technical, functional and leadership skills).	1
3	Types of capacity building - Based on structure (structured, semi-structured &unstructured), Based on context (orientation, induction and refresher), and other categories (online, Webinar, distance etc.).	1
4	Components of capacity development; Capacity development cycle	
	Unit 2: Capacity Development- Approaches and Strategies	
5	Capacity Development Dilemma- Theory versus Practice, Trainee versus Task, Structured versus Unstructured, Generic and Specific	1
6	Approaches in Capacity Development -Informative approach, Participatory approach, Experimental approach/ Experiential, Performance based approach	1
7	Capacity Development Strategies - Academic strategy, Laboratory strategy, Activity strategy, Action strategy, Personal development strategy, Organizational development strategy	1
	Unit 3: Planning and Organization of Capacity Development Programmes	
8	Steps in Designing and Planning of Capacity Development- Step 1. Select the participants, Step 2. Determine the participants' needs, Step 3. Formulate goal and objectives, Step 4. Outline the content, Step 5. Develop instructional activities, Step 6. Prepare the design, Step 7. Prepare evaluation form, Step 8. Determine follow-up activities	1
9	Organising capacity development programme	1
10	Operational arrangements at different stages- Before the programme, During the programme, Middle of the programme, At the end of the programme, After the programme, Follow up; Stakeholders' responsibilities	
	Block 2: Capacity Development Needs Assessment	
	Unit 1: Planning and Organization of Capacity Development Programmes	
11	Concept of Need Assessment	1
12	Approaches in Need Analysis- Performance Analysis, Task Analysis, Competency Study	1
13	Needs Survey	1
	Unit 2: Capacity Development Needs Assessment Methods	
14	Data Collection Methods in Identifying Needs - Rational Methods (Observation, Informal talks, Complaints, Comparison, Analysis of report, Opinion poll, Buzz session, Analysis of the new programme), Empirical Methods (Job analysis, Performance evaluation, Checklist or Questionnaire Method, Tests, Critical Incident Technique, Card Sort Method, Focus Group Discussion, Interview, SWOT Analysis);	1
15	Information and Skills required in Need Analysis	1
16	Identification of Needs through Task Analysis - Task identification, Task Analysis, Gap Analysis	1

Sr. No.	Topic	No. of Lecture (s)
	Block 3: Capacity Development Institutions and Management	
	Unit 1: Capacity Development Institutions	
17	Capacity Developer (Trainer): Meaning and concept	1
18	Types of Capacity Developers (regular, ad-hoc, part time, guest and consultants)	1
19	Roles of Capacity Developer (explainer, clarifier, supporter, confronter, role model, linker, motivator, translator/ interpreter, change agent); Good Capacity Developer – Qualities, skills and roles Qualities, Skills (Intrapersonal & Inter personal), Roles (Manager, Strategist, Task Analyst, Media Specialist, Instructional Writer, Marketer, Facilitator, Instructor, Counsellor, Transfer Agent, Evaluator)	2
20	Capacity Development Centres and Locations; Organisation's Role in Capacity Development	1
	Unit 2: Capacity Development Project Formulation	
21	Project Proposal: Concept and Meaning; Steps in Project Formulation- Review of past proposals, Consulting experts, consultants, and previous organizers, Review past project evaluation reports, Interact with the prospective beneficiaries; Format for Writing Project Proposal (LFA).	1
	Block 4: Capacity Development Process and HRD	
	Unit 1: Capacity Development Methods and Tools	
22	Capacity Development Methods –Lecture, Discussion, Syndicate, Seminars, Conference, Symposium, Role Play, Case study, Programmed Instruction, T - group/ Laboratory methods; Factors Determining Selection of Methods - Capacity development objectives, subject matter, categories of participants, and the available resources like time, location, budget; Capacity Development Aids	2
	Unit 2: Evaluation	
23	Capacity Development Programme Evaluation - Meaning & Importance	1
24	Purpose of Evaluation; Principles of Evaluation	1
25	Types of Evaluation – Formative, Summative, Kirkpatrick's four levels of evaluation	1
26	Process of Evaluation- Evaluation at the beginning, Evaluation during the programme, Evaluation at the end	1
27	Use of evaluation findings	1
28	Statistical Tools for evaluation	1
	Unit 3: Impact Assessment	
29	Impact Assessment- Meaning, Need, Features, Benefits, Concepts; Indicators for Impact Assessment - Direct indicators, Indirect or proxy indicators, Quantitative indicators, Qualitative indicators, Result chain / hierarchy of indicators	1
30	Methods of Impact Evaluation- Learning retention of participants (KOSA), Impact on the job performance, Impact on organizational effectiveness, Impact on stakeholder's competency	1
	Unit 4: Human Resource Development	
31	HRD: Meaning, Importance and Benefits	1
32	Types of HRD Systems & Sub-systems Career system (Manpower planning, Recruitment, Career planning, Succession planning, Retention), Work system (Role analysis, Role efficacy, Performance plan, Performance feedback and guidance, Performance appraisal, Promotion, Job rotation, Reward), Development system (Induction, Training, Job enrichment, Self-learning mechanisms, Potential appraisal, Succession development, Counselling, Mentor system), Self-renewal system (Survey, Action research, Organisational development interventions), Culture system (Vision, mission and goals, Values, Communication, Get together and celebrations, Task force, Small groups)	2

Sr. No.	Topic	No. of Lecture (s)
33	Components of HRD System - Performance Appraisal, Potential Appraisal, Task System, Development System, Socialisation System, Governance; Functions of HRD-Organisational Development, Career Development, Capacity Development	1
	TOTAL	32

Practical

Sr. No.	Topic	No. of Practical (s)
1	Capacity development needs assessment exercise	1
2	Capacity development project formulation exercise	1
3	Planning, organizing and conducting an extension capacity development programme	2
4	Designing a programme	2
5	Writing learning objectives	1
6	Developing objectives into curriculum	2
7	Training plan	1
8	Organizing capacity development workshop	2
9	Evaluation with pre- and post-training tests	2
10	Training methods – Practicing each method mentioned in contents as group exercise	2
	TOTAL	16

Suggested Reading

ADB. 2009. Training Needs Assessment and Strategic Training Plan.

Bentaya GM, and Hoffmann V (Eds). 2011. Rural Extension Volume 3 -Training Concepts and Tools. Margraf Publishers GmbH, Scientific books, KanalstraBe 21; D-97990, Weikersheim, 191 pp.

DFID .2003. Promoting Institutional and Organisational Development. A Source Book of Tools and Techniques, Department for International Development, United Kingdom

DoPT.2014. Civil Services Competency Dictionary: Strengthening Human Resource Management of Civil Service. Department of Personnel and Training, Government of India

FAO .2010. FAO Capacity Assessment Approach and Supporting Tools - Discussion Draft, Food and Agriculture Organisation of the United Nations

FAO .2012. Capacity Development: Learning Module 2. FAO Approaches to Capacity Development in Programming. Processes and Tools, Food and Agriculture Organisation of the United Nations

FAO .2012. Corporate Strategy on Capacity Development.

FAO .2013. Capacity Development: Learning Module 4. Organization Analysis and Development Food and Agriculture Organisation of the United Nations

GFRAS. 2012. The New Extensionist: Roles, Strategies, and Capacities to Strengthen Extension and Advisory Services, Global Forum for Advisory Services

GFRAS. 2015. The New Extensionist: Core Competencies for Individuals, GFRAS Brief 3.

Horton D. 2002. Planning, Implementing, and Evaluating Capacity Development. ISNAR Briefing Paper 50.

ICAR 2015. Training Policy 2015, Indian Council of Agricultural Research.

IISD 2015. Appreciative Inquiry and Community Development. International Institute for Sustainable Development.

LENCD 2011. How to assess existing capacity and define capacity needs, Learning Network on Capacity Development.

Maguire. 2012. Module 2: Agricultural Education and Training to Support Agricultural Innovation Systems. Overview. Agricultural Innovation Systems: An Investment Source book. The World Bank.

Mbabu AN and Hall A. 2012. Capacity Building for Agricultural Research For DevelopmentLessons from Practice in Papua New Guinea. United Nations University-Maastricht Economic and Social Research Institute on Innovation and Technology (UNU-MERIT). https://www.merit.unu.edu/archive/docs/hl/201302_Capacity%20Building%20for%20 Agricultural%20Research%20Development_Final.pdf

Mittal N, Sulaiman RV and Prasad R M. 2016. Assessing Capacity Needs of Extension and Advisory Services a Guide for Facilitators. Agricultural Extension in South Asia. http:// www.aesanetwork.org/assessing-capacity-needs-of-extension-and-advisory-services-aguide-for-facilitators/

Mishra DC. 1990. New Directions in Extension Training. Directorate of Extension, Ministry of Agriculture, Govt. of India, New Delhi.

OECD/DAC. 2006. The Challenge of Capacity Development: Working Towards Good Practice, Organisation for Economic Cooperation and Development.

Pretty JN, Gujit I, Thompson J, and Scoones I. 1995. A Trainer's Guide for Participatory Learning and Action. IEED Participatory Methodology Series. Social Sciences: Agricultural Extension Education 259

Rolf PL and Udai P. 1992. Facilitating Development: Readings for Trainers, Consultants and Policy-makers, New Delhi: Sage Publications, pp. 359

Rolf PL and Udai P. 1990. Training for Development, (3rd edn) by (West Hartford, Kumarian Press, 1990, pp. 333.

SIDA.2000. Capacity Development. SIDA Working Paper No. 4. Analysis of Needs for Capacity Development.

SIDA. 2000. Working Paper No. 4. Analysis of Needs for Capacity Development

Sulaiman RV and Mittal N. 2016. Capacity Needs of Extension and Advisory Services (EAS) in South Asia. Policy Brief No 1. Agricultural Extension in South Asia. http:// www.aesanetwork.org/policy-brief-no-1-capacity-needs-of-extension-and-advisory-serviceseas-in-south-asia/

Swanson BE and Rajalahti R. 2010. Strengthening Agricultural Extension and Advisory Services. A Guide for Facilitators.

TAP. 2013. Capacity Development for Agricultural Innovation Systems - Key Concepts and Definitions. Tropical Agricultural Platform

TAP. 2016. Common Framework on Capacity Development for Agricultural Innovation Systems. Guidance Note on Operationalization, Tropical Agricultural Platform

UNDP. 1998. Capacity Assessment and Development in a Systems and Strategic Management Context. Technical Advisory Paper No. 3. Management Development and Governance Division Bureau forDevelopment Policy, January 1998, United Nations Development Programme

UNDP. 1998. CapacityAssessment and Development in a Systems and Strategic Management Context. Technical Advisory UNU-MERIT, Netherlands.

UNDP. 2008. Capacity Assessment Methodology. User's Guide. Capacity Development Group. Bureaufor Development Policy.

UNDP. 2009. Capacity Development: A UNDP Primer, United Nations Development Programme

WAC. 2013. Assessing Capacity Needs and Strategy Development for Grassroots Rural Institutions: A Guide for Facilitators. World Agroforestry Centre (WAC)

Websites

- TAP–Tropical Agriculture Platform for Capacity Development– https://www.tapipedia.org/
- FAO–FAO Capacity Development– http://www.fao.org/capacity-development/en/
- GFRAS–Global Forum for Rural Advisory Services– http://www.g-fras.org/en/
- AESA–Agricultural Extension in South Asia– http://www.aesanetwork.org/

I. Course Title : ICTs for Agricultural Extension and Advisory Services
II. Course Code : EXT 506
III. Credit Hours : 2+1

IV. Why this course?

Information and Communication Technologies (ICTs) are continuously evolving. More ICT applications having better relevance to extension and advisory services (EAS) are currently available considering the human and other resource constrains faced by EAS, ICTs can supplement and complement EAS extension efforts in a cost-effective way. Extension professionals should have sound knowledge of ICTs and comprehensive understanding on its various applications for effectively deploying these in EAS provision. This course will provide knowledge and hands-on-experience on ICT applications relevant for EAS.

V. Aim of the course
• To discuss different ICT initiatives, knowledge management process and application aspects
• To orient students on advances in smart/ disruptive technologies and data analytics
• Hands on experience in navigating ICTs

The course is organized as follows:

No.	Blocks	Units
1	Introduction to Information and Communication Technologies (ICTS) and e-Extension	1. ICTs- Concepts and Status 2. ICTs in Knowledge Management 3. e-Extension initiatives in Agriculture and allied sectors
2	Application of ICTs in Extension and advisory services	1. ICT Applications 2. ICT Expert Systems 3. ICT Networks
3	Knowledge management and Standards	1. Policies in Knowledge Management 2. Web Standards 3. Social Media Applications to engage audience
4	Smart and disruptive Technologies and advanced analytics for agricultural extension	1. Smart Technologies 2. Human Computer Interactions

VI. Theory

Block	Unit	Lecture	Content	Weightage
1. Introduction to Information & Communication Technologies (ICTs) & E-extension	1. ICTs- Concepts & Status	1, 2	ICTs- meaning, concepts, basics of ICTs, global & national status, types & functions of ICTs, innovations.	**6**
		3, 4	Meaning of e-Governance, e-learning, mLearning, advantages and limitations of ICTs.	**6**
	2. ICTs in Knowledge Management	5, 6	Knowledge management-meaning, approaches & tools. Role of ICTs in Agricultural Knowledge Management.	**6**
	3. e-Extension initiatives in Agriculture & allied sectors	7, 8	e-Extension, overview on Global & national e-extension initiatives, Inventory of e-Extension initiatives in Agriculture & allied sectors from Central and State governments, ICAR, SAUs, private sector & NGO initiatives in India.	**6**
Block 2: Application of ICTs in Extension and Advisory Services	1: ICT Applications	9, 10	Knowledge centres (tele centres), digital kiosks, websites & web portals, community radio, farmers call centres, mobile phone based advisory services and mobile applications (mExtension, mLearning),	**6**
		11, 12	Self-learning CDs on Package of practices, social media, digital videos, Market Intelligence and Information Systems- ICT enabled Supply-Chains and Value-Chains/ e-Marketing (e-NAM, Agmarknet, *etc*.).	**6**

	2. ICT Expert Systems	13, 14	Expert System / Decision Support System/ Management Information Systems, Farm Health Management & Intelligence System for Plant Health, Animal Health, Soil Health, Fishery, Water, Weather, etc. Social Sciences: Agricultural Extension Education	6
	3 ICT Networks	15, 16	Global & regional knowledge networks, international information management systems, e-Learning platforms (MOOCS, Course CCRA, EduEx, *etc*), e-Governance Systems;	6
		17	Digital networks among extension personnel, Farmer Producers Organisations (FPOs)/ SHGs/ Farmers Groups.	3
Block 3: Knowledge Management and Standards	1. Policies in Knowledge Management	18, 19	Global policy / Standards on e-Governance, National policy on e-governance, Open Data / Open Gov Standards & Open Source etc.	6
		20	Language Technology Applications; National e-Agriculture policy/ Strategies/ guidelines.	3
	2. Web Standards	21, 22	Web standards, creating & writing for webportals, Development of mobile applications, .	6
		23, 24	Developing digital videos storyboard, video recording- video editing, types of blogs & writing guidelines	6
	3. Social Media Applications to engage audience	25	Video conference, live streaming & webinars,	4
		26	Types & functions of social media applications, guidelines for preparing social media content, engaging audience and data-analytics.	6
Block 4: Smart and Disruptive Technologies and Advanced Analytics for Agricultural Extension	1. Smart Technologies	27, 28	Open technology computing facilities, System for data analytics/ mining/ modelling/ Development of Agricultural simulations; Remote Sensing, GIS, GPS, Information Utility (AIU); disruptive technologies- Analysis; Internet of Things (IoTs), Drones, Artificial intelligence (AI), block chain technology, social media & Big Data analytics for extension.	6
	2. Human Computer Interactions	29, 30	Human Centered Learning/Ergonomics/ Human Computer Interactions-Meaning; Theories of multimedia learning - Sweller's cognitive load theory, Mayer's cognitive theory of multimedia learning, Schnotz's integrative model of text and picture comprehension, van Merriënboer's four-component instructional design model for multimedia learning; Basic Principles of Multimedia Learning - Split-attention, Modality, Redundancy, Coherence, Signaling, segmenting, pre-training, personalisation, voice embodiment;	6
		31, 32	Advanced principles - Guided discovery, worked examples, Self-explanation, drawing, feedback, multiple representation, Learner control, animation, collaboration, prior knowledge, and working memory. Designing ICT gadgets based on human interaction principles - Interactive design-Meaning, importance; Approaches of interactive design - user-centered design, activity centered design, systems design, and genius design; Methods of interactive design - Usability testing methods.	6
			Total Weightage	**100**

VII. Practicals

• Content and client engagement analysis
• Designing extension content for ICTs
• Creating and designing web portals, blogs, social media pages
• Developing digital videos
• Live streaming extension programmes and organising webinars
• Working with Farmers call centres
• Engaging with professional digital networks
• Writing for digital media

VIII. Teaching methods/activities
– Lecture
– Guest Lectures
– Assignment (Reading/Writing/ developing mApps/ media management/Social media initiatives)
– Student's Book/Publication Review
– Student presentation
– Group Work
– Student's interview of ICT practitioners/ champions
– Documenting good practices and case studies
– Review of ICT policy documents and guidelines/ standards
– Short internship with ICT projects

IX. Learning outcome
After successful completion of this course, the students are expected to be able to:
– Appreciate the importance of the ICTs in EAS
– Understand the ICT application aspects
– Critically evaluate ICT initiatives and smart/disruptive technologies
– To execute extension functions by applying ICTs and
– Engage stakeholders in knowledge management process

X. Suggested Reading

Andres D and Woodard J. 2013. *Social media handbook for agricultural development practitioners.* Publication by FHI360 of USAID. http://ictforag.org/toolkits/ social/ SocialMedia4 AgHandbook.pdf

Barber J, Mangnus E and Bitzer V. 2016. *Harnessing ICT for agricultural extension.* KIT Working Paper 2016: 4. https://213ou636sh0ptphd141fqei1-wpengine.netdna-ssl.com/sed/wp-content/uploads/sites/2/2016/11/KIT_WP2016-4_Harnessing-ICT-for-agricultural-extension.pdf

Bheenick K and Bionyi I. 2017. *Effective Tools for Knowledge Management and Learning in Agriculture and Rural Development.* CTA Working paper. https://publications.cta.int/media/publications/downloads/1986_PDF.pdf

Fafchamps M and Minten B. 2012. *Impact of SMS based Agricultural Information on Indian Farmers.* The World Bank Economic Review, Published by the Oxford University Press on behalf of the International Bank for Reconstruction and Development.

FAO 2011. *E-learning methodologies a guide for designing and developing e-learning courses.*

Food and Agriculture Organization of the United Nations. http://www.fao.org/docrep/015/i2516e/i2516e.pdf

George T, Bagazonzya H, BallantyneP, Belden C, Birner R, Del CR and Treinen S. 2017. *ICT in agriculture: connecting smallholders to knowledge, networks, and institutions.* Washington,
DC: World Bank.
https://openknowledge.worldbank.org/handle/10986/12613 16

Heike Baumüller. 2018. The little we know: An exploratory literature review on the utility of
mobile phone enabled services for smallholder farmers. *Journal of International Development.* 30, 134–154.

Laurens K. 2016. *NELK Module 6: Basic Knowledge Management and Extension*, New Extensionist Learning Kit (NELK), Global Forum for Rural Advisory Services (GFRAS). http://www.g-fras.org/en/knowledge/new-extensionist-learning-kit-nelk.html# module-6- Social Sciences: Agricultural Extension Education basic-knowledge-management-and-extension

Mayer RE. 2005. *The Cambridge handbook of multimedia learning.* New York: University of Cambridge.

MEAS & Access Agriculture 2013. *A Guide to Producing Farmer-to-Farmer Training Videos.*https://www.agrilinks.org/sites/default/files/resource/files/MEAS%20Guide%20to%20Producing%20Farmer-to-Farmer%20 Training%20 Videos%202013_04.pdf

Meera SN.2013. *Extension, ICTs and Knowledge Management: The 10 difficult questions.* Blog 15. Agricultural Extension in South Asia. http://www.aesanetwork.org/extension-icts-and-knowledge-management-the-10-difficultquestions/

Meera SN. 2017. *Disruptive Technologies – Big Data and Internet of Things in Strengthening Extension & Advisory Services.* Blog 68. Agricultural Extension in South Asia. http://www.aesanetwork.org/disruptive-technologies-big-data-and-internet-of-things-instrengthening-extension-advisory-services/

Meera SN. 2018. *A Treatise on Navigating Extension and Advisory Services through Digital Disruption.* Blog 90. Agricultural Extension in South Asia. http://www.aesanetwork.org/atreatise-on-navigating-extension-and-advisory-services-through-digital-disruption/

Mittal N, Surabhi, Gandhi, Sanjay and Gaurav T. 2010. *Socio-Economic Impact of Mobile Phones on Indian Agriculture.* ICRIER Working Paper No. 246, Indian Council for Research on International Economic Relations (ICRIER), New Delhi.

Preece J, Rogers Y, & Preece, J. 2007. *Interaction design: Beyond human-computer interaction.*Chichester: Wiley.

Saravanan R, Sulaiman RV, Davis K and Suchiradipta B. 2015. *Navigating ICTs for Extension and Advisory Services. Note 11. GFRAS Good Practice Notes for Extension and Advisory Services.* GFRAS: Lindau, Switzerland. https://agrilinks.org/sites/default/files/resource/files/gfras-ggp-note11_navigating_icts_for_ras_1.pdf

Saravanan R and Suchiradipta B. 2015. *mExtension – Mobile Phones for Agricultural Advisory Services.* Note 17. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. www.g-fras.org/en/download.html?download=349: ggp-note-17-mextension-mobile-phonesfor- agricultural-advisory-services

Saravanan R and Suchiradipta B. 2016. *Social media policy guidelines for agricultural extension and advisory services,* GFRAS interest group on ICT4RAS, GFRAS: Lindau, Switzerland. www.g-fras.org/en/knowledge/gfras-publications.html?download =415: social-media-policyguidelines-for-agricultural-extension-and-advisory-services

SaravananR. 2010. (Ed.) *ICTs for Agricultural Extension: Global Experiments, Innovations and Experiences,* New India Publishing Agency (NIPA), New Delhi. http://www.saravananraj.net/wp-content/uploads/2014/12/32_India_ICTs-for-Agricultural-Extension_Saravanan.pdf

Saravanan R, Suchiradipta B, Chowdhury A, Hambly OH and Hall K. 2015. *Social Media for Rural Advisory Services.* Note 15. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. www.g-fras.org/en/download.html?download=355: ggp-note-15-social-media-for-ruraladvisory-services

Saravanan R, Suchiradipta B, Meera SN, Kathiresan C and Anandaraja N. 2015. *Web Portals for Agricultural Extension and Advisory Services.* Note 16. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland. www.g-fras.org/en/download.html?download=356: gfras-ggp-note-16-web-portals-foragricultural- extension-and-advisory-services

Saravanan R.2014. (Ed.). *Mobile Phones for Agricultural Extension: Worldwide mAgri Innovations and Promise for Future,* New India Publishing Agency, New Delhi. http://www.saravananraj.net/wp-content/uploads/2014/12/27_Mobile-phones-for-Agricultural-Extension-in-India_Saravanan-Raj-Draft.pdf Restructured and Revised Syllabi of Post-graduate Programmes Vol. 2

Saravanan R, Kathiresan C, and Indra DT. 2011. (Eds.) *Information and Communication Technology for Agriculture and Rural Development,* New India Publishing Agency (NIPA), New Delhi.

Sophie T and Alice VDE.2018. *Gender and ICTs - Mainstreaming gender in the use of information and communication technologies (ICTs) for agriculture and rural development*, FAO. http://www.fao.org/publications/card/en/c/I8670EN
Suchiradipta B and Saravanan R. 2016. *Social media: Shaping the future of agricultural extension and advisory services,* GFRAS interest group on ICT4RAS discussion paper, GFRAS: Lindau, Switzerland. www.g-fras.org/en/knowledge/gfras-publications.html? download=414: social-mediashaping-the-future-of-agricultural-extension-and-advisory-services

Vignare K. 2013. *Options and strategies for information and communication technologies within agricultural extension and advisory services.* MEAS Discussion paper. http://meas.illinois.edu/wpcontent/uploads/2015/04/Vignare-K-2013-ICT-and-Extension-MEAS-Discussion-Paper.pdf

World Bank. 2017. *ICT in Agriculture (Updated Edition): Connecting Smallholders to Knowledge, Networks, and Institutions.* Washington, DC: World Bank. https://openknowledge.worldbank.org/handle/10986/27526

Websites

FAO–Food and Agricultural Organisation (Research and Extension)
http://www.fao.org/research-and-extension/en/
CTA–The Technical Centre for Agricultural and Rural Cooperation: Digitalization–
https://www.cta.int/en/channel/digitalisation-sid05951b8c7-e611-4f34-9ae6-8c0fc0c822bc
GFRAS–Global Forum for Rural Advisory Services–
http://www.g-fras.org/en/
AESA–Agricultural Extension in South Asia–
http://www.aesanetwork.org/

Aim of the course

• To orient students on the importance of evaluation and impact assessment
• To develop capacities for evaluation and impact assessment
• Discuss ways of conducting evaluations and impact assessment

Theory

Block 1: Programme Evaluation
Unit 1: Introduction to Evaluation
Concept of Evaluation: Meaning and concept in different contexts; Why Evaluation is Done and When? Programme planning, analyse programme effectiveness, decision making, accountability, impact assessment, policy advocacy; Objectives, types, criteria and approaches of programme evaluation, evaluation principles; the context of program evaluation in agricultural extension; Role and Credibility of Evaluator: Role as educator, facilitator, consultant, interpreter, mediator and change agent. Competency and credibility of evaluator.
Unit 2: Evaluation Theories
Evaluation theory vs. practice – synergistic role between practice and theory in evaluation; Evaluation theories - Three broad categories of theories that evaluators use in their works - programme theory, social science theory, and evaluation theory (other theories/ approaches - Utilization-Focused Evaluation & Utilization-Focused Evaluation (U-FE) Checklist, Values Engaged Evaluation, Empowerment Evaluation, Theory-Driven Evaluation). Integration between theory and practice of evaluation: –evaluation forums, workshops, conferences and apprenticeship/ internship.
Block 2: Evaluation Process
Unit 1: How to Conduct Evaluation
Ten Steps in programme evaluation: (1) Identify and describe programme you want to evaluate (2) Identify the phase of the programme(design, start-up, ongoing, wrap-up, follow-up) and type of evaluation study needed (needs assessment, baseline, formative, summative, follow-up) (3) Assess the feasibility of implementing an evaluation (4) Identify and consult key stakeholders (5) Identify approaches to data collection (quantitative, qualitative, mixed) (6) Select data collection techniques (survey interviews and questionnaires with different types) (7) Identify population and select sample (sampling for evaluation, sample size, errors, sampling techniques (8) Collect, analyse and interpret data (qualitative and quantitative evaluation data analysis) (9) Communicate findings (reporting plan, evaluation report types, reporting results, reporting tips, reporting negative findings (10) Apply and use findings (programme continuation/ discontinuation, improve on-going programme, plan future programmes and inform programme stakeholders).
Unit 2: Evaluating the Evaluation
Evaluating the Evaluation - 10 Steps as above with focus on conceptual clarity, representation of programme components and stakeholders, sensitivity, representativeness of needs, sample and data, technical adequacy, methods used for data collection and analysis, costs, recommendations and reports.
Block 3: Programme Management Techniques
Unit 1: SWOT Analysis and Bar Charts
SWOT Analysis – Concept, origin and evolution; SWOT As a Programme Management Tool; Conducting SWOT Analysis - Common Questions in SWOT Analysis; Advantages and Disadvantages of SWOT; Bar Charts (Gantt Charts and Milestone Charts) - Characteristics, advantages and limitations.
Unit 2: Networks
Networks – Introduction, origin and widely used networks (Programme Evaluation and Review Technique (PERT) and Critical Path Method (CPM), differences between PERT and CPM, advantages and disadvantages. Networks Terminology – Activity, Dummy activity, Event (predecessor event, successor event, burst event, merge event, critical event), Earliest Start Time (EST), Latest Start Time (LST), Critical Path, Critical Activity, Optimistic time (To), Pessimistic time (Po), Most likely time (TM), Expected time (TE), Float or Slack, Event Slack, Lead time, Lag time, Fast tracking, Crashing critical path, Acclivity Table, Danglers, Normal Time. Rules for Preparation of Networks and Steps in Network Preparation with example.

Block 4: Programme Evaluation Tools
Unit 1: Bennett's Hierarchy of Evaluation
Introduction to Bennett's hierarchy – Background and description; Relation between programme objectives & outcomes at 7 levels of Bennett's hierarchy – Inputs, activities, participation, reactions, KASA changes, practice and behaviour changes, end results. Advantages and Disadvantages of Bennett's hierarchy
Unit 2: Logic Framework Approach (LFA)
Introduction to LFA – Background and description; Variations of LFA - Goal Oriented Project Planning (GOPP) or Objectives Oriented Project Planning (OOPP); LFA Four-by-Four Grid – Rows from bottom to top (Activities, Outputs, Purpose and Goal & Columns representing types of information about the events (Narrative description, Objectively Verifiable Indicators (OVIs) of these events taking place, Means of Verification (MoV) where information will be available on the OVIs, and Assumptions). Advantages and Disadvantages of LFA.
Block 5: Impact Assessment
Unit 1: Introduction to Impact Assessment
Concept of Impact Assessment: Meaning, concept and purpose in different contexts; Impact Assessment Framework: Meaning of inputs, outputs, outcomes, impacts and their relation with monitoring, evaluation and impact assessment.
Unit 2: Impact Assessment Indicators
Indicators for impact assessment – meaning and concept; Selecting impact indicators; Types of impact indicators for technology and extension advisory services - social and behavioral indicators, socio-cultural indicators, technology level indicators, environmental impact assessment indicators and institutional impact assessment indicators.
Unit 3: Approaches for Impact Assessment
Impact assessment approaches – Quantitative, qualitative, participatory and mixed methods with their advantages and disadvantages; Quantitative Impact Assessment Types – Based on Time of Assessment (Ex-ante and ex-post), Based on Research Design (Experimental, quasi experimental, Non-experimental). Econometric Impact Assessment: - (Partial Budgeting Technique, Net Present Value, Benefit Cost Ratio, Internal Rate of Return, Adoption Quotient, etc). Qualitative and Participatory Impact Assessment Methods.
Unit 4: Environment Impact Assessment (EIA)
Concept of EIA – Introduction, What it is? Who does it? Why it is conducted? How it is done?; Benefits and important aspects of EIA-risk assessment, environmental management and post product monitoring. Environmental Components of EIA – air, noise, water, biological, land; Composition of the expert committees and Steps in EIA process - screening, scoping, collection of baseline data, impact prediction, mitigation measures and EIA report, public hearing, decision making, monitoring and implementation of environmental management plan, assessment of alternatives, delineation of mitigation measures and EIA report; Salient Features of 2006 Amendment to EIA Notification - Environmental Clearance/Rejection, participants of EIA; Shortcomings of EIA and How to improve EIA process?

Practicals

- Search the literature using web / printed resources and identify evaluation indicators for the following:
  - Utilization-Focused Evaluation
  - Values Engaged Evaluation
  - Empowerment Evaluation
  - Theory-Driven Evaluation
- Visit Directorate of Extension in your university and enquire about extension programmes being implemented / coordinated by Directorate. Develop an evaluation proposal of any one programme using 'Ten Steps in Programme Evaluation' discussed in the theory class.
- Review any comprehensive programme evaluation report from published sources. Evaluate the report and write your observations following the 'Evaluating the Evaluation' approach.
- Identify at least four agriculture development programmes and their objectives being implemented in your state. Write two attributes each on Strengths, Weaknesses, Opportunities and Threats related to the identified programme objectives in the SWOT grid.
- Identify an on-going development programme and make-out 6 activities from the programme.
- Draw a Gantt chart for 12 months programme activities.
- Write a report on evaluation hierarchy levels and indicators as per Bennett's hierarchy of evaluation for any development programme or project.

- Develop LFA four-by-four grid for any development programme or project with activities, outputs, purpose and goal and objectively verifiable indicators, means of verification & assumptions.
- Visit a nearby KVKs / ATIC. Select any agriculture technology with package of practices and extension advisory services promoted by KVK / ATIC. Identify impact assessment indicators for social and behavioral indicators, socio-cultural indicators, technology level indicators, environmental impact assessment indicators and institutional impact assessment indicators.
- Refer any Environment Impact Assessment report and analyse steps in EIA. Write your observations.

LECTURE SCHEDULE
Theory

Sr. No.	Topic	No. of Lecture (s)
	Block 1: Programme Evaluation	
	Unit 1: Introduction to Evaluation	
1	Concept of Evaluation: Meaning and concept in different contexts	1
2	Why Evaluation is Done and When? Programme planning, analyse programme effectiveness, decision making, accountability, impact assessment, policy advocacy; Objectives, types, criteria and approaches of programme evaluation, evaluation principles	
3	The context of program evaluation in agricultural extension	1
4	Role and Credibility of Evaluator: Role as educator, facilitator, consultant, interpreter, mediator and change agent. Competency and credibility of evaluator	
	Unit 2: Evaluation Theories	
5	Evaluation theory vs. practice – synergistic role between practice and theory in evaluation	2
6	Evaluation theories - Three broad categories of theories that evaluators use in their works - programme theory, social science theory, and evaluation theory (other theories/ approaches - Utilization-Focused Evaluation & Utilization-Focused Evaluation (U-FE) Checklist, Values Engaged Evaluation, Empowerment Evaluation, Theory-Driven Evaluation)	
7	Integration between theory and practice of evaluation: –evaluation forums, workshops, conferences and apprenticeship/ internship	1
	Block 2: Evaluation Process	
	Unit 1: How to Conduct Evaluation	
8	Ten Steps in programme evaluation: (1) Identify and describe programme you want to evaluate (2) Identify the phase of the programme(design, start-up, ongoing, wrap-up, follow-up) and type of evaluation study needed (needs assessment, baseline, formative, summative, follow-up) (3) Assess the feasibility of implementing an evaluation (4) Identify and consult key stakeholders (5) Identify approaches to data collection (quantitative, qualitative, mixed) (6) Select data collection techniques (survey interviews and questionnaires with different types) (7) Identify population and select sample (sampling for evaluation, sample size, errors, sampling techniques (8) Collect, analyse and interpret data (qualitative and quantitative evaluation data analysis) (9) Communicate findings (reporting plan, evaluation report types, reporting results, reporting tips, reporting negative findings (10) Apply and use findings (programme continuation/ discontinuation, improve on-going programme, plan future programmes and inform programme stakeholders).	3
	Unit 2: Evaluating the Evaluation	
9	Evaluating the Evaluation - 10 Steps as above with focus on conceptual clarity, representation of programme components and stakeholders, sensitivity, representativeness of needs, sample and data, technical adequacy, methods used for data collection and analysis, costs, recommendations and reports	2

Sr. No.	Topic	No. of Lecture (s)
	Block 3: Programme Management Techniques	
	Unit 1: SWOT Analysis and Bar Charts	
10	SWOT Analysis – Concept, origin and evolution; SWOT As a Programme Management Tool	1
11	Conducting SWOT Analysis - Common Questions in SWOT Analysis; Advantages and Disadvantages of SWOT	
12	Bar Charts (Gantt Charts and Milestone Charts) - Characteristics, advantages and limitations	1
	Unit 2: Networks	
13	Networks – Introduction, origin and widely used networks (Programme Evaluation and Review Technique (PERT) and Critical Path Method (CPM), differences between PERT and CPM, advantages and disadvantages	1
14	Networks Terminology – Activity, Dummy activity, Event (predecessor event, successor event, burst event, merge event, critical event), Earliest Start Time (EST), Latest Start Time (LST), Critical Path, Critical Activity, Optimistic time (To), Pessimistic time (Po), Most likely time (TM), Expected time (TE), Float or Slack, Event Slack, Lead time, Lag time, Fast tracking, Crashing critical path, Acclivity Table, Danglers, Normal Time	2
15	Rules for Preparation of Networks and Steps in Network Preparation with example	
	Block 4: Programme Evaluation Tools	
	Unit 1: Bennett's Hierarchy of Evaluation	
16	Introduction to Bennett's hierarchy – Background and description	1
17	Relation between programme objectives & outcomes at 7 levels of Bennett's hierarchy – Inputs, activities, participation, reactions, KASA changes, practice and behaviour changes, end results	2
18	Advantages and Disadvantages of Bennett's hierarchy	
	Unit 2: Logic Framework Approach (LFA)	
19	Introduction to LFA – Background and description	1
20	Variations of LFA - Goal Oriented Project Planning (GOPP) or Objectives Oriented Project Planning (OOPP)	
21	LFA Four-by-Four Grid – Rows from bottom to top (Activities, Outputs, Purpose and Goal & Columns representing types of information about the events (Narrative description, Objectively Verifiable Indicators (OVIs) of these events taking place, Means of Verification (MoV) where information will be available on the OVIs, and Assumptions)	1
22	Advantages and Disadvantages of LFA	
	Block 5: Impact Assessment	
	Unit 1: Introduction to Impact Assessment	
23	Concept of Impact Assessment: Meaning, concept and purpose in different contexts	1
24	Impact Assessment Framework: Meaning of inputs, outputs, outcomes, impacts and their relation with monitoring, evaluation and impact assessment	1
	Unit 2: Impact Assessment Indicators	
25	Indicators for impact assessment – meaning and concept	1
26	Selecting impact indicators	
27	Types of impact indicators for technology and extension advisory services - social and behavioral indicators, socio-cultural indicators, technology level indicators, environmental impact assessment indicators and institutional impact assessment indicators	2

Sr. No.	Topic	No. of Lecture (s)
	Unit 3: Approaches for Impact Assessment	
28	Impact assessment approaches – Quantitative, qualitative, participatory and mixed methods with their advantages and disadvantages	1
29	Quantitative Impact Assessment Types – Based on Time of Assessment (Ex-ante and ex-post), Based on Research Design (Experimental, quasi experimental, Non-experimental). Econometric Impact Assessment: - (Partial Budgeting Technique, Net Present Value, Benefit Cost Ratio, Internal Rate of Return, Adoption Quotient, etc). Qualitative and Participatory Impact Assessment Methods	2
	Unit 4: Environment Impact Assessment (EIA)	
30	Concept of EIA – Introduction, What it is? Who does it? Why it is conducted? How it is done?; Benefits and important aspects of EIA-risk assessment, environmental management and post product monitoring	2
31	Environmental Components of EIA – air, noise, water, biological, land	
32	Composition of the expert committees and Steps in EIA process - screening, scoping, collection of baseline data, impact prediction, mitigation measures and EIA report, public hearing, decision making, monitoring and implementation of environmental management plan, assessment of alternatives, delineation of mitigation measures and EIA report	2
33	Salient Features of 2006 Amendment to EIA Notification - Environmental Clearance/Rejection, participants of EIA	1
34	Shortcomings of EIA and How to improve EIA process?	1
	TOTAL	32

Practicals

Sr. No.	Topic	No. of Practicals (s)
1	Search the literature using web / printed resources and identify evaluation indicators for the following: • Utilization-Focused Evaluation • Values Engaged Evaluation • Empowerment Evaluation • Theory-Driven Evaluation	1
2	Visit Directorate of Extension in your university and enquire about extension programmes being implemented / coordinated by Directorate. Develop an evaluation proposal of any one programme using 'Ten Steps in Programme Evaluation' discussed in the theory class	2
3	Review any comprehensive programme evaluation report from published sources. Evaluate the report and write your observations following the 'Evaluating the Evaluation' approach	2
4	Identify at least four agriculture development programmes and their objectives being implemented in your state. Write two attributes each on Strengths, Weaknesses, Opportunities and Threats related to the identified programme objectives in the SWOT grid	2
5	Identify an on-going development programme and make-out 6 activities from the programme	2
6	Draw a Gantt chart for 12 months programme activities	1
7	Write a report on evaluation hierarchy levels and indicators as per Bennett's hierarchy of evaluation for any development programme or project	1
8	Develop LFA four-by-four grid for any development programme or project with activities, outputs, purpose and goal and objectively verifiable indicators, means of verification & assumptions	2

Sr. No.	Topic	No. of Practicals (s)
9	Visit a nearby KVKs / ATIC. Select any agriculture technology with package of practices and extension advisory services promoted by KVK / ATIC. Identify impact assessment indicators for social and behavioral indicators, socio-cultural indicators, technology level indicators, environmental impact assessment indicators and institutional impact assessment indicators	2
10	Refer any Environment Impact Assessment report and analyse steps in EIA. Write your observations	1
	TOTAL	**16**

Suggested Reading

Adrienne M, Gundel S, Apenteng E and Pound B. 2011. Review of Literature on Evaluation Methods Relevant to Extension. Lindau, Switzerland: Global Forum for Rural Advisory Services, Lindau, Switzerland

Bagnol B. 2014. Conducting participatory monitoring and evaluation. Pages 81-85 in FAO, Decision tools for family poultry development. FAO Animal Production and Health Guidelines, No. 1 6. Rome, Italy: FAO.

Bennett CF. 1979. Analyzing impacts of extension programs. Washington, D.C., USA: U.S. Department of Agriculture.

Boyle R and Le Maire D. 1999. Building effective evaluation capacity: lessons from practice. New Brunswick, NJ: Transaction Publishers.

Bradford RW, Duncan, P.J. and Tarcy, B. 1999. Simplified Strategic Planning: A No-nonsense Guide for Busy People Who Want Results Fast. New York: Chandler House.

Braverman MT and Engle M. 2009. Theory and rigor in Extension program evaluation planning. Journal of Extension 47(3). www.joe.org/joe/2009june/a1.php

Chen H. 2012. Theory-driven evaluation: Conceptual framework, application and advancement. In: Strobl R., Lobermeier O., Heitmeyer W. (eds) Evaluation von Programmen und Projekten für eine demokratische Kultur. Springer VS, Wiesbaden

Chen, H.T. 2011. Practical program evaluation: Theory-Driven Evaluation and the Integrated Evaluation Perspective. Thousand Oaks, CA: Sage.

Dale R. 2004. Evaluating Development Programmes and Projects, New Delhi, India: Sage Publications.

Duncan Haughey 2017. SWOT Analysis. https://www.projectsmart.co.uk/swot-analysis.php.

Fetterman, D.M. 2012. Empowerment Evaluation: Learning to think like an evaluator. In M.C. Alkin (Ed.), Evaluation Roots (2nd edition) (pp. 304-322).

GFRAS. 2012. Guide to evaluating rural extension. Lindau, Switzerland: Global Forum for Rural Advisory Services (GFRAS).

Greene, J.C., Boyce, A., and Ahn, J. (2011). A values-engaged educative approach for evaluating education programs: A guidebook for practice. Champaign, IL: University of Illinois at Urbana-Champaign. http://comm.eval.org/communities/community-home/librarydocuments/ viewdocument? DocumentKey=f3c734c0-8166-4ba4-9808-a07e05294583

Greene J. 1988. Stakeholder participant and utilization in program evaluation. Evaluation Review, 12: 91–116.

Hall A, Sulaiman VR, Clark N and Yoganand B. 2003. From measuring impact to learning institutional lessons: An innovation systems perspective on improving the management of international agricultural research. Agricultural Systems, 78(2): 213–241.

Karthikeyan, C., Vijayaraghavan, K. and Lavanya, P. 2007. Formative evaluation of Kisan Call Centres. Tamil Nadu. Indian Journal of Extension Education, 43(1 &2): 20-25 (For LFA Example).

Murray P. 2000. Evaluating participatory extension programs: challenges and problems. Australian Journal of Experimental Agriculture, Vol. 40 No. 4 pp. 519–526.

Narayan D.1993. Participatory Evaluation: Tools for Managing Change in Water and Sanitation (Technical Paper 207). Washington, D.C.: The World Bank.

Neuchatel Group. 2000. Guide for Monitoring, Evaluation and Joint Analyses of Pluralistic Extension Support. Lindau, Switzerland: Neuchâtel Group.

www.g-fras.org/fileadmin/UserFiles/Documents/Frames-and-guidelines/M_E/Guide-forMonitoring-Evaluation-and-Joint-Analysis.pdf

Njuki J, Mapila M, Kaaria S and Magombo T. 2008. Using community indicators for evaluating research and development programmes: Experiences from Malawi. Development in Practice 18(4): 633–642.

OECD. 1998. Review of the DAC Principles for Evaluation of Development Assistance. Paris: DAC Working Party on Aid Evaluation.

www.oecd.org/dataoecd/63/50/2065863.pdf (accessed 6 June 2011)

Patton, M.Q. 2013. Utilization-Focused Evaluation (U-FE) Checklist. Western Michigan University Checklists.

Rosanne Lim .2012. Why You Should Do a SWOT Analysis for Project Management.

Rossi PH and Freeman HE. 1985. Evaluation: a systematic approach (third edition). Beverly Hills, CA Sage Publications, Inc.

Sanders J. 1994. The program evaluation standards, 2nd edition. Joint committee on standards for educational evaluation. Thousand Oak, CA: Sage Publications, Inc.

Sasidhar, P.V.K. and Suvedi, M. 2015. Integrated contract broiler farming: An evaluation case study in India. Urbana, IL: USAID-MEAS. www.meas.illinois.edu (For Bennett's Hierarchy Example).

Shadish, W. R. Jr., Cook, T. D., and Leviton, L. C. 1991. Chapter 2: Good theory for social program evaluation. Foundations of Program Evaluation: Theories of Practice (pp. 36-67). Newbury Park, CA: Sage.

Srinath, L.S. 1975. PERT and CPM Principles and Applications, East-West Press, New Delhi.

Suvedi M, Heinze K and Ruonavaara D. 1999. How to Conduct Evaluation of Extension Programs. ANRECS Center for Evaluative Studies, Dept of ANR Education and Communication Systems, Michigan State University Extension, East Lansing, MI, USA

https://msu.edu/~suvedi/Resources/Documents/4_1_Evaulation%20manual%202000.pdf

Suvedi M. 2011. Evaluation of agricultural extension and advisory services — A MEAS training module. Urbana Champaign, IL: Modernizing Extension and Advisory Services Project.

http://www.meas-extension.org/meas-offers/training/evaluatingextensionprograms

Suvedi, M. and Kaplowitz, M.D. 2016. Process skills and competency tools – what every extension worker should know – Core Competency Handbook. Urbana, IL: USAID-MEAS.

Suvedi, M and Morford S. 2003. Conducting Program and Project Evaluations: A Primer for Natural Resource Program Managers in British Columbia. Forrex-Forest Research Extension Partnership, Kamloops, B.C. Forrex Series 6.

USAID .2011. Evaluation policy. Washington, D.C., USA: Bureau for Policy and Planning.

Venkateswarlu, K and Raman, K.V. 1993. Project Management Techniques for R&D in Agriculture. Sterling Publishers Pvt.Ltd., New Delhi.

Wholey JS, Harty HP and Newcomer KE. 1994. Handbook of practical program evaluation. San Francisco, USA: Jossey-Bass Publishers.

Websites
- Better Evaluation– www.betterevaluation.org
- TAP– Tropical Agriculture Platform: Monitoring and Evaluation - www.tapipedia.org
- GFRAS– Global Forum for Rural Advisory Services http://www.g-fras.org/en/
- AESA– Agricultural Extension in South Asia http://www.aesanetwork.org/
- USAID– United States Agency for International Development: Evaluation https://www.usaid.gov/evaluation
- https://education.illinois.edu/faculty/jennifer-greene

EXT 508 Managing Extension Organizations (2+1)

Objective

By the end of the course students will be able to

- Understand management related terminologies and concepts and demonstrate their knowledge and skills on various management functions, as applicable to extension organizations.
- Analyse organizational structures, functions and interlinkages in public and private sector extension management.
- Critically analyse and apply decision making approaches, leadership approaches and motivation approaches to manage extension organizations.
- Make sound decisions, lead, motivate, coordinate and control extension management activities.

Theory

Block	Unit No.	Lecture No.	Topic	Weight age
Block 1: Basics of Management	Unit 1: Management- An Over view	1-2	Management and Extension management – Meaning, concept, nature and importance; and theories of management.	6
		3-4	Management, administration and supervision -meaning, definition and scope; Approaches to management,	6
		5-6	Principles, functions and levels of management;	6
		7-8	Qualities and skills of a manager; Interpersonal relations in the organization; Reporting and budgeting	6
Block 2: Management in different types of Extension Organizations	Unit 1: Extension Management in public, private sector and other sectors	9-11	Extension management (POSDCORB) in public sector, Department of Agriculture, Agricultural Technology Management Agency (ATMA), Krishi Vigyan Kendra (KVK), SAUs, ICAR Institutes, Private sector, Cooperatives, NGOs, FPOs etc. Organisational Structure, Relations between different units- Challenges in management	9
	Unit 2: Concepts in Management	12-13	Decision making – Concept, Types of decisions, Styles and techniques of decision making, Steps in DM Process, Guidelines for making effective decisions;	6
		14-15	Human Resource Management: Manpower planning, Recruitment, Selection, Placement and Orientation, Training and Development; Dealing with fund and staff shortages in different extension organizations (KVK, ATMA etc.);	6
		16-17	Leadership – Concept, Characteristics, Functions, Approaches to leadership, Leadership styles;	6
		18	Authority and responsibility, Delegation and decentralization, line and staff relations;	3
		19	Challenges of co-ordination in extension organizations; Managing interdepartmental coordination and convergence between KVK, ATMA and line departments; Coordinating pluralism in extension services; Challenges in managing public-private partnerships (PPPs) at different levels in agricultural development in general and extension in particular;	4
		20	Performance appraisal – Meaning, Concept, Methods.	4
Block 3: Motivation and Organizational Communication	Unit 1: Motivation and Communication	21-22	Managing work motivation – Concept, Motivation and Performance, Approaches to motivation,	6
		23-24	Team building; Mentoring, Team work and team-building strategies;	6
		25-26	Organizational Communication – Concept, Process, Types, Networks, Barriers to Communication;	6
		27	Time management, Modernization of information handling	4
	Unit 2: Supervision and Control	28	Supervision – Meaning, Responsibilities, Qualities and functions of supervision, Essentials of effective supervision;	4
		29-30	Managerial Control – Nature, Process, Types, Techniques of Control, Observation, PERT and CPM,	6
		31-32	Management Information Systems (MIS): Concept, tools and techniques, MIS in extension organizations.	6

Practical
- Simulated exercises on techniques of decision making
- Study the structure and function of agro-enterprises, Designing organizational structure/ organograms.
- Group activity on leadership development skills
- Simulated exercise to understand management processes
- Field visit to extension organizations (ATARI, KVKs, NGOs), FPOs, dairy cooperatives to understand the functions of management
- Practical exercises on PERT & CPM
- Group exercise on development of short term and long-term plans for agro-enterprises
- Developing model agriculture-based projects including feasibility study, financial planning and cost-benefit analysis

Suggested Readings

EXT 509: Enabling Innovation (1+1)

Objective

By the end of the course students will be able to

- Understand concepts and elements in agricultural innovation systems.
- Analyse innovation enabling environments, innovation platforms and existing methodologies for AIS Diagnosis.
- Assess Extension and Advisory Services within AIS and role of capacity development in AIS to innovate.
- Understand concept, tools, approaches and pathways to scaling up
- Plan and implement scaling up pathways and apply scalability assessment tools to evaluate them.
- Appreciate role of policies and innovation management for scaling up knowledge and their implications for Extension and Advisory Services.

Theory

Block	Unit No.	Lecture No.	Topic	*Weight age*
Block 1: Agricultural Innovation Systems	Unit 1: Agricultural Innovation Systems: Concepts and Elements	1-2	Origins of the innovation systems concept-Innovation vs Invention; Agricultural Innovation System (AIS) -ToT, FSR, AKIS and AIS compared, Key insights from AIS: How Innovation takes place;	10
		3	Role of different actors in AIS; Importance of interaction and knowledge flows among different actors,	6
		4	Role of Communication in Innovation Process; Role of Extension in AIS,	6
		5	Different views to analyze AIS: structural view, functional view, process view and capacity view.	6
	Unit 2: Enabling Innovation	6	Role of enabling environment: Policies and institutions in enabling innovation; Role of Government-Innovation Policy: Achieving coordination and policy coherence;	6
		7	Innovation Platforms; Role of Innovation Brokers,	6
		8-9	Methodologies for AIS Diagnosis: Typologies of existing methodologies-strengths and limitations;	10
		10	Assessing Extension and Advisory Services within AIS;	6
		11	Capacity Development in AIS: Strengthening capacities to innovate.	6
Block 2: Scaling Up Knowledge for Innovation	Unit 1: Scaling Up: Tools, Approaches and Pathways	12	Scaling Up: Definitions; Changing views on scaling up: Approaches to Scaling Up: Push, pull, plant, probe	6
		13-14	Scaling up pathways: Drivers and spaces for scaling up; Framework and Tools for Scaling up	10
		15-16	Planning and implementing a scaling up pathways; Scalability assessment tools;	10
		17	Role of policies in scaling up: Influencing policies for scaling up;	6
		18	Innovation Management for scaling up knowledge and implications for Extension and Advisory Services.	6

Practical

- Identify one crop/commodity sector and use AIS framework to diagnose actors and their roles, patterns of interaction, institutions determining interaction and the enabling policy environment and develop a AIS Diagnosis Report (Review and Key informant interviews)
- Undertake a case study on a successful case of scaling up knowledge and identify factors that contributed to its success
- Identify one specific knowledge (a technology, an approach) that has been recently introduced and develop an Up-scaling Strategy

Suggested Readings

Alex K. 2012. Facilitating Agricultural Innovation Systems: a critical realist approach. Studies in Agricultural Economics. 114: 64-70. http://dx.doi.org/10.7896/j.1210
Binswanger HP and Aiyar SS. 2003. Scaling Up Community Driven Development Theoretical Underpinnings and Program Design Implications. Mimeo. Washington, D.C.: World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/18310/multi0page.pdf?sequence=1&isAllowed=y
Binswanger-Mkhize HP, de Regt JP, and Spector S. 2009. Scaling Up Local and Community Driven Development: A Real World Guide to Its Theory and Practice. February, World Bank.

http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/244362-1237844546330/5949218-1237844567860/Scaling_Up_LCDD_Book_ rfillesize.pdf

Cees L and Noelle A. 2011. Rethinking Communication in Innovation Processes: Creating Space for Change in Complex Systems. The Journal of Agricultural Education and Extension, 17: 1, 21-36, DOI: 10.1080/1389224X.2011.536344

Chuluunbaatar D and LeGrand S. 2015. Enabling the Capacity to Innovate with a system-wide assessment process. Occasional papers on Innovation in Family Farming. Food and Agriculture Organization of the United Nations.
http://www.fao.org/3/a-i5097e.pdf

Cooley, L and Kohl R. 2005. Scaling Up-From Vision to Large-scale Change, A Management Framework for Practitioners. Washington, DC: Management Systems International.
http://www.msiworldwide.com/files/scalingup-framework.pdf

Cooley L and Ved R. 2012. Scaling Up-From Vision to Large-Scale Change: A Management Framework for Practitioners. Management Systems International.
http://1qswp72wn11q9smtq15ccbuo.wpengine.netdna-cdn.com/wp-content/uploads/ScalingUp_3rdEdition.pdf

Grovermann C, Gaiji S, Nichterlein K, Moussa AS, Dias S, Sonnino A and Chuluunbaatar D. 2017. Chapter 2. The Potential of a Global Diagnostic Tool for Agricultural Innovation Systems. Global Innovation Index 2017. Food and Agriculture Organization of the United Nations.
http://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2017-chapter2.pdf

Davis K and Heemskerk W. 2012. Coordination and Collective Action for Agricultural Innovation Overview Module 1 Investment in Extension and Advisory Services as Part of Agricultural Innovation Systems. In Agricultural Innovation Systems: An Investment Sourcebook. Agricultural and Rural Development. World Bank. © World Bank.
http://siteresources.worldbank.org/INTARD/Resources/335807-1330620492317/9780821386842ch3.pdf

Davis K and Sulaiman RV. 2016. Extension Methods and Tools. Module 2 NELK. GFRAS.
https://www.g-fras.org/en/component/phocadownload/category/70-new-extensionist-learning-kit-nelk.html?download=560:nelk-module-2-extension-methods-and-tools-textbook

Francis J, Mytelka L, van Huis A and Röling N (eds.). 2016. Innovation Systems: Towards Effective Strategies in support of Smallholder Farmers. Technical Centre for Agricultural and Rural Cooperation (CTA) and Wageningen University and Research (WUR)/ Convergence of Sciences Strengthening Innovation Systems (CoS-SIS), Wageningen.
https://publications.cta.int/media/publications/downloads/1829_PDF.pdf

Glidemacher PR and Wongtschowski M. 2015. Catalysing innovation: from theory to action. KIT Working Papers. Royal Tropical Institute.
https://www.kit.nl/sed/wp-content/uploads/sites/2/2015/06/WPS1_2015_online.pdf

Hall A, Sulaiman RV, Beshah T, Madzudzo E. and R Puskur. 2009. Agricultural innovation system capacity development: Tools, principles or policies? Capacity.org (37): 16-17
http://www.capacity.org/en/journal/practice_reports/tools_principles_or_policies

Hartmann, A., Johannes F. Linn 2008. Scaling Up: A framework and lessons for development effectiveness from literature and practice. Working Papers 5. The Brookings Institution.
https://www.brookings.edu/wp-content/uploads/2016/06/10_scaling_up_aid_linn.pdf

Heather C. 2008. Scale-up and replication for social and environmental enterprises. International Institute for Sustainable Development.
https://www.iisd.org/pdf/2008/seed_scale_enterprises.pdf

IFAD 2011. Section XXI: Guidelines for Scaling Up. Updated Guidelines and Source Book for Preparation and Implementation of a Results-Based Country Strategic Opportunities Programme (RB-COSOP). Volume 1: Guidelines, International Fund for Agricultural Development.

ILRI. 2014. Innovation Platform practice briefs. International Livestock Research Institute.
https://clippings.ilri.org/2014/02/03/ipbrief1/

Laurens K and Peter G. 2012. The role of innovation brokers in agricultural innovation systems. 211-230. 10.1787/9789264167445-19-en.
http://siteresources.worldbank.org/INTARD/Resources/335807-1330620492317/9780821386842_ch3.pdf

Laurens K, Mierlo V, Barbara and Leeuwis, C.2012. Evolution of systems approaches to agricultural innovation: Concepts, analysis and interventions. Farming Systems Research

into the 21st Century: The New Dynamic. 457-483. 10.1007/978-94-007-4503-2_20.

Laurens K, Aarts N and Leeuwis C. 2010. Adaptive management in agricultural innovation systems: The interactions between innovation networks and their environment. Agricultural Systems 103: 390–400.
https://pdfs.semanticscholar.org/6c25/d11a1ef7130794efbceda6f1cb181851a072.pdf

Leeuwis C, Ban and Van D. 2001. Communication for Rural Innovation: rethinking agricultural extension.
https://www.researchgate.net/publication/40790782_ Communication_for_Rural_ Innovation_rethinking_agricultural_extension

Leeuwis C and van den Ban A W. 2004. Communication for rural innovation: Rethinking agricultural extension. John Wiley & Sons.

Linn, J. F. 2011. Scaling up with development assistance. What have we learned so far? Scale Up Workshop. USDA/NIFA/CRA.

Linn, J. F., et al,. 2010. 'Scaling Up the Fight Against Rural Poverty: An Institutional Review of IFAD's Approach.' Global Economy & Development, Working Paper 43.
https://www.brookings.edu/wp-content/uploads/2016/06/10_ifad_linn_kharas.pdf

OECD. 2012. Innovation for Development. A Discussion of the Issues and an Overview of Work of the OECD Directorate for Science, Technology and Industry.
https://www.oecd.org/innovation/inno/50586251.pdf

OECD. 2013. Agricultural Innovation Systems: A Framework for Analysing the Role of the Government, OECD Publishing, Paris,
https://doi.org/10.1787/9789264200593-en.

Patton and Quinn M. 2008. Evaluating the complex: Getting to maybe. Oslo, Norway.
https://aidontheedge.files.wordpress.com/2009/09/patton_oslo.ppt

Posthumus H and Wongtschowski M. 2014. Innovation Platforms. Note 1. GFRAS good practice note for extension and advisory services. GFRAS: Lindau, Switzerland.
https://www.g-fras.org/en/good-practice-notes/innovation-platforms.html#SNote1

Rajalahti R, Janssen W and Pehu E. 2008. Agricultural innovation systems: From diagnostics toward operational practices. Agriculture & Rural Development Department, World Bank.
https://agrilinks.org/sites/default/files/resource/files/ARDDiscussionPaper38.pdf

Rajalahti R, Janssen W and Pehu E. 2008. Agricultural Innovation Systems: From Diagnostics toward Operational Practices. Agriculture & Rural Development Department, World Bank
http://documents.worldbank.org/curated/en/381521468138591604/pdf/434350NWP0AR DD1Box0327368B01PUBLIC1.pdf

Saravanan R and Suchiradipta B. 2017. Agricultural Innovation Systems: Fostering Convergence for Extension. Bulletin 2, Extension Next. MANAGE.
http://www.manage.gov.in/publications/extnnext/June2017.pdf

Sulaiman R V, Chuluunbaatar D and Vishnu S. 2018. Up scaling Climate Smart Agriculture Lessons for Extension and Advisory Services. Food and Agriculture Organization of the United Nations.
http://crispindia.org/wp-content/uploads/2015/09/Upscaling-CSA-Lessons-for-Extension-and-Advisory-Services-FAO-2018.pdf

Sulaiman RV 2015. Agricultural Innovation Systems. Note 13. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland.
https://www.g-fras.org/en/good-practice-notes/agricultural-innovation-systems.html #SNote8

Sulaiman, R V, Hall A and Reddy VTS. 2014. Innovation Management: A New Framework for Enabling Agricultural Innovation. Productivity. Jul-Sep2014, Vol. 55 Issue 2, p140-148.

Sulaiman RV and Davis K. 2012. The "New Extensionist": Roles, strategies, and capacities to strengthen extension and advisory services. In Lindau, Switzerland: Global Forum for Rural Advisory Services.
http://www.g-fras.org/en/157-thenew-extensionist

Sulaiman R V and Hall A. 2012. Beyond Technology Dissemination: Reinventing Agricultural Extension. Outlook on Agriculture. Vol 31, Issue 4, pp. 225–233.
http://journals.sagepub.com/doi/abs/10.5367/000000002101294119?journalCode=oaga

Sulaiman R V., Hall A, Reddy, VTS. and Dorai K. 2010. Studying Rural Innovation Management: A Framework and Early Findings from RIU in South Asia Riu Discussion Paper Series #2010-11, December 2010, Research Into Use (RIU): UK.
http://www.crispindia.org/docs/5%20Studying%20Rural%20Innovation%20Management.pdf

Tropical Agriculture Platform. 2016. Common Framework on Capacity Development for

Agricultural Innovation Systems. Guidance Note on Operationalization. CAB International, Wallingford, UK.
https://www.cabi.org/Uploads/CABI/about-us/4.8.5-other-business-policies-and-strategies/tap-guidance-note.pdf

Tropical Agriculture Platform. 2017. Common Framework on Capacity Development for Agricultural Innovation Systems. Synthesis Document. CAB International, Wallingford, UK.
https://www.cabi.org/Uploads/CABI/about-us/4.8.5-other-business-policies-and-strategies/tap-synthesis-document.pdf

WHO and ExpandNet. 2010. Nine steps for developing a scaling-up strategy. World Health Organization.
http://www.expandnet.net/PDFs/ExpandNet-WHO%20Nine%20Step%20Guide%20published.pdf

Wigboldus S, Leeuwis C. 2013. Towards responsible scaling up and out in agricultural development An exploration of concepts and principles, Discussion Paper, Centre for Development Innovation, Wageningen UR.
http://edepot.wur.nl/306491

William M. Rivera, V. Rasheed Sulaiman 2009. Extension: Object of Reform, Engine for Innovation, Outlook on Agriculture, Volume: 38 issue: 3, page(s): 267-273
http://journals.sagepub.com/doi/10.5367/000000009789396810

Wilson, David, Wilson K, and Harvey C, editors 2011. Small farmers, big change. Scaling up impacts in smallholder agriculture. Practical Action Publishing and Oxfam GB.
https://oxfamilibrary.openrepository.com/bitstream/handle/10546/144211/bk-small-farmers-big-change-290911-en.pdf;jsessionid=69F2657B00C64921053C732AE933C82E?sequence=3

World Bank 2003. Scaling-Up the Impact of Good Practices in Rural Development. A working paper to support implementation of the World Bank's Rural Development Strategy. The World Bank.
http://documents.worldbank.org/curated/en/203681468780267815/pdf/260310White0co1e1up1final1formatted.pdf

World Bank. 2006. Enhancing Agricultural Innovation: How to Go Beyond the Strengthening of Research Systems. Washington, DC: World Bank. © World Bank.
https://openknowledge.worldbank.org/handle/10986/7184

World Bank. 2012. Agricultural Innovation Systems: An Investment Sourcebook. Washington DC, World Bank.
http://siteresources.worldbank.org/INTARD/Resources/335807-1330620492317/9780821386842.pdf

Websites

AESA- Agricultural Extension in South Asia– http://www.aesanetwork.org/

FAO- Food and Agricultural Organisation (Research and Extension)– http://www.fao.org/research-and-extension/en/

GFRAS- Global Forum for Rural Advisory Services– http://www.g-fras.org/en/

KIT- Royal Tropical Institute (KIT)-Sustainable Economic Development– https://www.kit.nl/sed/

TAPipedia - Tropical Agriculture Platform– https://www.tapipedia.org/

WUR-Wageningen University and Research Research [Knowledge, Technology and Innovation Group (KTI)]– https://www.wur.nl/en/Research-Results/Chair-groups/Social-Sciences/KnowledgeTechnology-and-Innovation-Group.htm

EXT 510: Gender Mainstreaming (2+1)

Objective

By the end of the course students will be able to

- Understand gender related terminologies and concepts and appreciate the importance of gender in agriculture.
- Analyse gender issues, conduct gender analysis, identify gender needs and apply strategies to address gender and women empowerment.
- Appreciate gender in agricultural research and extension and integrate it in the process of agro-technology development and dissemination.
- Understand importance of gender mainstreaming in agriculture and apply appropriate extension strategies to address gender issues such as gender in agricultural value chains, gender and climate change adaptation etc.
- Evaluate women empowerment approaches, global best practices, policies and frameworks for women empowerment and gender mainstreaming.
- Understand entrepreneurship development for women in agriculture and agro processing sector.

Theory

Block	Unit No.	Lecture No.	Topic	Weight age
1 Why Gender Matters	UNIT I Historical Perspective of Gender	1	Historical perspective of gender: Feminism and emergence of gender as a concept,	3
		2	Scope of gender studies in agriculture and rural development	3
	UNIT II Agrarian Importance of Gender	3	Agrarian Importance of Gender: Understanding the importance of gender in national and global agriculture	3
		4	Key gender issues and challenges in agriculture	6
		5	Gender and value chain	3
		6	Global actions to address gender-needs and strategies to address gender and women empowerment.	3
2 Gender Related Concepts, Analysis, Gender and Technology	UNIT I Gender Related Concepts and Divides	7-8	Understanding of the concepts of gender, gender equality and equity, gender balance, gender blindness, gender relations, gender neutrality, gender bias and discrimination, gender rights, gender roles and responsibilities.	6
		9	Gender budgeting,	3
		10-11	Gender divides and their implications such as gender digital divide, gender access to resources and inputs divide, gender mobility divide, gender wage divide,	4
		12	Gender needs: practical and strategic.	4
	UNIT II Gender Analysis	13	Gender analysis: Importance, usage, prerequisites, techniques of gender analysis	4
		14-15	Tools for gender analysis.	6
	UNIT III Gender and Technology	16-17	How gender and technology impact each other, Gender neutral technology, Gender sensitive technology,	6
		18-19	Gender supportive assistance in technology adoption-Gender in agricultural research and extension.	5
3 Gender Mainstreaming and Women Empowerment	UNIT I Gender Mainstreaming	20-21	Importance of gender mainstreaming in agriculture, Extension strategies to address gender issues such as gender and health, nutrition, gender in agricultural value chains, gender and climate change adaptation, gender and globalization& liberalization	5
		22-23	Strategies/Tools for mainstreaming gender concerns into the national programmes and policies	5
	UNIT II Women Empowerment	24	Importance of women empowerment, Current national women empowerment and gender indices.	4
		25	Women empowerment approaches (technological, organizational, political, financial, social, legal and psychological),	5
		26	Case studies based on experiences and learning from various development and rural development programmes	2

UNIT III Global Best Practices, Policies and Frameworks	27-28	Global best practices, women empowerment and gender mainstreaming models and frameworks for addressing gender concerns in agriculture, approaches of various organizations.	6
	29	Gender mainstreaming and special women focused programmes in agriculture and rural development.	4
UNIT IV Entrepreneurship Development for Women	30-31	Women entrepreneurship development in agriculture and agro processing: current status, women led enterprises, supporting organizations and schemes,	6
	32	Govt. policies, entrepreneurship development programme and process for women in agriculture.	4

Practical
- Visit to a village for understanding rural gender roles and responsibilities as groups, followed by class presentation by groups
- Exercise for capturing shifts in gender roles and responsibilities
- Conducting gender analysis in a village using gender analysis techniques
- Visit to agencies supporting women empowerment followed by report presentation. (Each student to visit a different organization such as State Rural Livelihood Mission, Women Development Corporation, Department of Agriculture, Important NGOs working for women empowerment)
- Exercise for identification and prioritization of issues affecting/needs for women empowerment
- Interaction with a successful women entrepreneur/ SHG

Suggested Readings

AGRIPROFOCUS 2014. Gender in value chains Practical toolkit to integrate a gender perspective in agricultural value chain development
https://agriprofocus.com/upload/ToolkitENGender_in_Value_ChainsJan2014compressed1415203230.pdf
Christine J, Nafisa F and Taylor DS. 2014. Gender and Inclusion Toolbox: Participatory Research in Climate Change and Agriculture. Global Forum for Rural Advisory Services, Switzerland. http://www.gfras.org/en/component/phocadownload/category/17-gender.html?download=456:gender-and-inclusion-toolbox-participatory-research-in-climate-change-and-agriculture
Colverson KE. 2015. Gender into Rural Advisory Services. Global Forum for Rural Advisory Services, Switzerland. http://www.g-fras.org/en/good-practice-notes/integrating-gender-into-rural-advisory-services.html#SNote1
Cristina M, Deborah R, Andrea A, Gale S, Kathleen C and Mercy A.2013. Reducing the Gender Gap in Agricultural Extension and Advisory Services: How to find the best fit for men and women farmers MEAS Discussion Paper 2, Modernizing Extension and Advisory Services. https://meas.illinois.edu/wp-content/uploads/2015/04/Manfre-et-al-2013-Gender-and-Extension-MEAS-Discussion-Paper.pdf
Fanzo, J., Marshall, Q., Wong, J., Merchan, R., Haber, M., Souza, A. &Verjee, N. 2015. The Integration of Nutrition into Extension and Advisory Services: A Synthesis of Experiences, Lessons, and Recommendations. Food and Nutrition Bulletin 36(2): 120-137. https://journals.sagepub.com/doi/10.1177/0379572115586783
FAO. 2011. Gender and agricultural value chains A review of current knowledge and practice and their policy implications. ESA Working Paper No. 11-05 (March 2011) http://www.fao.org/docrep/013/am310e/am310e00.pdf
GFRAS. 2013. Gender equality in Rural Advisory Services, Towards a Common Understanding. Global Forum for Rural Advisory Services, Switzerland. http://www.g-

fras.org/en/component/phocadownload/category/17-gender.html?download=169:gender-equality-in-rural-advisory-services-towards-a-common-understanding

GFRAS. 2013. Gender equality in Rural Advisory Services. Global Forum for Rural Advisory Services, Switzerland. http://www.g-fras.org/en/component/phocadownload/category/17-gender.html?download=180:gender-equality-in-rural-advisory-services

GFRAS. Gender in Extension and Advisory Services, Module 12, GFRAS New Extensionist Learning Kit (NELK). Global Forum for Rural Advisory Services. https://ingenaes.illinois.edu/wp-content/uploads/GFRAS_NELK_Module12_Gender-Manual-2.pdf

GFRAS. 2018. Nutrition-Sensitive Extension. Module 16, GFRAS New Extensionist Learning Kit (NELK). Global Forum for Rural Advisory Services. http://www.g-fras.org/en/component/phocadownload/category/70-new-extensionist-learningkit-nelk.html?download=713:module-16-nutrition-sensitive-extension

GIZ. 2013. Gender and Agricultural Extension. https://www.giz.de/fachexpertise/downloads/giz2012-en-gender-and-agricultural-extension.pdf

Grover I and Grover D. 2002. Empowerment of Women. Agrotech Publishing Academy.

JAEE (Editorial article). 2013. Gender Inequality and Agricultural Extension. The Journal of Agricultural Educatiion and Extension Vol 19 (5) 433-436.

Jaiswal S. 2013. Research Methodology in Gender Studies. Maxford Dynamic Series: 1-296.

Jessica F. 2015. Integrating Nutrition into Rural Advisory Services and Extension. Global Forum
for Rural Advisory Services, Switzerland.
https://www.g-fras.org/en/download.html?download=344: ggp-note-9-integrating-nutrition-into-rural-advisory-services-and-extension

Liz P. 2018. Implementing Gender Transformative Approaches (GTAs) in Agricultural Initiatives.
IGENAES and USAID.
https://ingenaes.illinois.edu/wp-content/uploads/ING-DP-2018_06-Gender-Transformative-Approaches-in-Agricultural-Initiatives-Poulsen.pdf

Michele MT and Kathleen C. 2014. Increasing access to agricultural extension and advisory services: How effective are new approaches in reaching women farmers in rural areas? International Livestock Research Institute.
http://www.gfras.org/en/component/phocadownload/category/17-gender.html?download=183:increasing-access-to-agricultural-extension-and-advisory-services-how-effective-are-new-approaches-in-reaching-women-farmers-in-rural-areas

Pena I and Garrett J. 2018. Nutrition-sensitive value chains-A guide for project design. International Fund for Agricultural Development (IFAD).
https://www.ifad.org/documents/38714170/40804965/NSVC+A+guide+for+project+design+-+Vol.+I.+Web+filepdf.pdf/5177a3c0-a148-4b1f-8fff-967a42f51ce8

Ponnusamy K and Sharma P. 2015. Gender Sensitization for Development. NDRI Publ.No.130/
2015.

Porter F, Smyth I and Sweetman C. 1999. Gender works: Oxfarm Experience in Policy and Practice. Oxfarm Publ.

Raj MK. 1998. Gender Population and Development. Oxford Univ. Press.

Rhoda MM and Kabisa M.2016. Analysis of Indicators and Management Tools Used in Zambia

to assess impact of Agricultural Extension Programmes on Gender Equity and Nutrition Outcomes.
https://ingenaes.illinois.edu/wp-content/uploads/ING-DP-2016_12-Measuring-Impact-of-Tools-in-Zambia-on-G-and-N_IAPRI-Mofya-Mukuka-Kabisa.pdf
Sahoo RK and Tripathy SN. 2006. SHG and Women Empowerment. Anmol Publ.
Sinha K. 2000. Empowerment of Women in South Asia. Association of Management Development
Institute in South Asia, Hyderabad.
Websites
AESA- Agricultural Extension in South Asia– http://www.aesanetwork.org/
GFRAS- Global Forum for Rural Advisory Services– http://www.g-fras.org/en/
INGENAES- Integrating Gender and Nutrition within Agricultural Extension Services– https://www.agrilinks.org/activities/ingenaes-integrating-gender-and-nutrition-within-agricultural-extension-services
RRW- Reaching Rural Women– http://www.reachingruralwomen.org/
UN WOMEN– http://www.unwomen.org/en

Aim of the course
- To orient students on the importance of policies in shaping extension's performance
- To discuss ways of generating policy relevant evidence to influence policies
- To develop capacities to engage with policy actors and the policy development process

Theory

Block 1: Why Policies Matter?
Unit 1: Understanding Policy
Why policies are important for extension? Role in providing structure, ensure funding and framework for providing functions-examples; Policy: definitions and types: Is policy a product or a process or both? Policies and institutions-How these influence defining organisational roles and performance in extension organizationsRole of policies in upscaling knowledge-Role of extension in influencing policies to enable innovation.

Unit 2: Policy Advocacy and Tools
Definition of advocacy, Approaches to policy advocacy-Advising, Media campaigning, Lobbying, Activism, Information Education Communication (IEC) and Behavior Change Communication (BCC); Advocacy for Rural Advisory Services (RAS); Policy advocacy strategy

Unit 3: Policy Analysis
Explain the meaning and use of policy analysis in decision- making; Describe different types of policy analysis- empirical, evaluative or normative policy analysis, retrospective/ prospective policy analysis, predictive/prescriptive/descriptive policy analysis; How to do policy analysis? - understand the process of policy analysis, highlight the different methods and techniques used in policy analysis, doing ethical policy analysis; Tools for policy impact- research tools, context assessment tools, communication tools, policy influence tools

Unit 4: Policy Development Process
Policy development process: Who drives policy change?: National Governments, Donors, Civil Society-varied experiences: Understanding the environment and key actors in policy space- problem identification-policy adoption, implementation and evaluation; stakeholder mapping, identifying opportunities and barriers, mobilising financial resources; Dealing with policy incoherence: identifying contradictions and challenges in policy implementation

Block 2: Using Evidence to Influence Policy Change
Unit 1: Influencing Policy Change
Generating evidence: Role of policy research; analyzing the usefulness and appropriateness of the evidence; Using evidence in policy advocacy; Understanding your audience: analyzing channels of influence; creating alliances; identifying policy champions; Defining goals and objectives; Developing advocacy messages: Policy papers, Policy briefs, good practice notes, etc.: Good practices in influencing policies Organising policy dialogues: Policy engagement strategy-Engaging with policy makers: GO and NGO experiences; Policy working groups; advisory panels; use of committees: Use of media including ICTs and social media for influencing policies.

Unit 2: Global Experience with Extension Policy
Extension policy in different countries: Explicit extension policy Vs extension as part of Agriculture Policy, Challenges in policy implementation: lack of capacities, financial resources, ownership, lack of stakeholder consultations: Strengthening capacities in extension to influence policies: Global Forum for Rural Advisory Services (GFRAS)'s efforts in strengthening extension policy advocacy: policy compendium, training modules, training for strengthening capacities to influence policies.

Practicals

- Analysis of country/state level agricultural/extension policy to understand the policy intentions from strengthening EAS
- Analysis of extension policy of other countries: policy intentions, processes adopted in development of the policy and mechanisms of policy implementation
- Interview key policy actors in EAS arena at the state/national level (eg: Director of Agriculture, Director of Extension in SAU, Chairman/Managing Director of Commodity Board. Member Agriculture, State Planning Board) to explore policy level challenges in EAS

- Identify what evidence policy makers look for from extension research? Is the evidence available? If so what form? (Reports, Briefs etc), If not, develop a plan
- Explore how different stakeholders influence policies (eg: policy advocacy of prominent NGOs, private sector and public sector) -What mechanisms and tools they use
- Identify policy level bottlenecks that constrain effective EAS delivery at the district level- Eg: Issues around linkages between KVK and ATMA; inter-departmental collaboration; public private partnerships; joint action etc.

LECTURE SCHEDULE
Theory

Sr. No.	Topic	No. of Lecture (s)
	Block 1: Why Policies Matter?	
	Unit 1: Understanding Policy	
1	Why policies are important for extension? Role in providing structure, ensure funding and framework for providing functions-examples	1
2	Policy: definitions and types: Is policy a product or a process or both? Policies and institutions-How these influence defining organisational roles and performance in extension organizations	2
3	Role of policies in upscaling knowledge-Role of extension in influencing policies to enable innovation	2
	Unit 2: Policy Advocacy and Tools	
4	Definition of advocacy	2
5	Approaches to policy advocacy-Advising, Media campaigning, Lobbying, Activism, Information Education Communication (IEC) and Behavior Change Communication (BCC)	
6	Advocacy for Rural Advisory Services (RAS)	1
7	Policy advocacy strategy	1
	Unit 3: Policy Analysis	
8	Explain the meaning and use of policy analysis in decision- making	1
9	Describe different types of policy analysis- empirical, evaluative or normative policy analysis, retrospective/ prospective policy analysis, predictive/prescriptive/descriptive policy analysis	2
10	How to do policy analysis? - understand the process of policy analysis, highlight the different methods and techniques used in policy analysis, doing ethical policy analysis	2
11	Tools for policy impact- research tools, context assessment tools, communication tools, policy influence tools	2
	Unit 4: Policy Development Process	
12	Policy development process	1
13	Who drives policy change?: National Governments, Donors, Civil Society- varied experiences	1
14	Understanding the environment and key actors in policy space- problem identification-policy adoption, implementation and evaluation; stakeholder mapping, identifying opportunities and barriers, mobilising financial resources	2
15	Dealing with policy incoherence: identifying contradictions and challenges in policy implementation	2
	Block 2: Using Evidence to Influence Policy Change	
	Unit 1: Influencing Policy Change	
16	Generating evidence: Role of policy research; analyzing the usefulness and appropriateness of the evidence; Using evidence in policy advocacy;	1
17	Understanding your audience: analyzing channels of influence; creating alliances; identifying policy champions; Defining goals and objectives	1
18	Developing advocacy messages: Policy papers, Policy briefs, good practice notes, etc.: Good practices in influencing policies	1

Sr. No.	Topic	No. of Lecture (s)
19	Organising policy dialogues: Policy engagement strategy-Engaging with policy makers: GO and NGO experiences; Policy working groups; advisory panels; use of committees	1
20	Use of media including ICTs and social media for influencing policies	1
	Unit 2: Global Experience with Extension Policy	
21	Extension policy in different countries	1
22	Explicit extension policy Vs extension as part of Agriculture Policy	1
23	Challenges in policy implementation: lack of capacities, financial resources, ownership, lack of stakeholder consultations	1
24	Strengthening capacities in extension to influence policies	1
25	Global Forum for Rural Advisory Services (GFRAS)'s efforts in strengthening extension policy advocacy: policy compendium, training modules, training for strengthening capacities to influence policies	1
	TOTAL	32

LECTURE SCHEDULE
Theory

Sr. No.	Topic	No. of Practical (s)
1	Analysis of country/state level agricultural/extension policy to understand the policy intentions from strengthening EAS	2
2	Analysis of extension policy of other countries: policy intentions, processes adopted in development of the policy and mechanisms of policy implementation	2
3	Interview key policy actors in EAS arena at the state/national level (eg: Director of Agriculture, Director of Extension in SAU, Chairman/Managing Director of Commodity Board. Member Agriculture, State Planning Board) to explore policy level challenges in EAS	4
4	Identify what evidence policy makers look for from extension research? Is the evidence available? If so what form? (Reports, Briefs etc), If not, develop a plan	2
5	Explore how different stakeholders influence policies (eg: policy advocacy of prominent NGOs, private sector and public sector) -What mechanisms and tools they use	3
6	Identify policy level bottlenecks that constrain effective EAS delivery at the district level- Eg: Issues around linkages between KVK and ATMA; inter-departmental collaboration; public private partnerships; joint action etc	3
	TOTAL	16

Suggested Reading

AEPF. 2015. Report on the Policy Forum by Ghana Directorate of Agricultural Extension Services, Ministry of Food and Agriculture; Modernizing Extension and Advisory Services and Agriculture Policy Support Project, Ghana.

http://www.g-fras.org/en/knowledge/documents/category/18-policy.html?download=490: report-on-the-ghana-agricultural-extension-policy-forum-2015

Amosa, MDU. 2018. Policy Analysis and Engagement Toolkit. A guide for Pacific Non-government Organizations in the Fisheries Sector.WWF. http://d2ouvy59p0dg6k.cloudfront.net/downloads/policy_analysis_toolkit_quality.pdf

Anonymous.N.d. Policy analysis. http://www.egyankosh.ac.in/bitstream/123456789/25760/1/Unit-19.pdf

Anonymous. N.D. Policy analysis. https://web.csulb.edu/~msaintg/ppa670/670steps.htm

Bardach E. A Practical Guide for Policy Analysis The Eightfold Path to More Effective Problem Solving Fourth Edition. Sage Publications. CQ Press. http://dlib.scu.ac.ir/bitstream/Ebook/32773/2/9781608718429.pdf

Cairney P. 2015. Chapter 2: Policymaking in the UK: What is Policy and How is it Made?. Policy and Policymaking in the UK. https://paulcairney.files.wordpress.com/2013/08/chapter-2-20-8-13-cairney-policypolicymaking-uk.pdf

CRISP, MANAGE and ICAR-ATARI.2016. Training cum workshop on Strengthening Extension Policy Interface at MANAGE on 9-11th Nov, 2016 in collaboration with the CRISP & ICARATARI, Bangalore. http://crispindia.org/index.php/events/

DAC. 2000. POLICY FRAME WORK FOR AGRICULTURAL EXTENSION. Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India https://sameti.org/Policy%20Framework%20for%20Agricultural%20Extension.pdf

DAFF.n.d. National Policy on Extension and Advisory Services for Agriculture, Forestry and Fisheries. Department of Agriculture, Forestry and Fisheries, Republic of South Africa. https://www.daff.gov.za/doaDev/topMenu/National%20Policy.pdf

Douglas JA.1984. Why policy analysis and ethics are incompatible. Journal of Policy Analysis and Management. https://doi.org/10.1002/pam.4050030407

Dube L, Nii A Addy, Blouin C and Drager N. 2014. From policy coherence to 21st century convergence: A whole-of-society paradigm of human and economic development. Annals of the New York Academy of Sciences. 1331: 201–215. https://nyaspubs.onlinelibrary. wiley.com/doi/epdf/10.1111/nyas.12511

FAO. 2013. FAO Policy on Gender Equality. Attaining Food Security Goals in Agriculture and Rural Development. Food and Agriculture Organization of the United Nations, Rome. http://www.fao.org/docrep/017/i3205e/i3205e.pdf

FAO. 2018. Policy Guidance Series. Strengthening Sector Policies for Better Food Security and Nutrition Results. Food and Agriculture Organization of the United Nations, Rome. http://www.fao.org/publications/policy-guidance-series/en/

FOS. 2006. Tracking the Impact of Policy Strategies in Conservation Work. Foundations of Success. Prepared for The Nature Conservancy's Global Conservation Approach Team. https://www.cbd.int/doc/pa/tools/Tracking%20the%20Impact%20of%20Policy%20 Strategies% 20in%20Conservation%20Work%20.pdf

GFRAS. 2018. RAS Policy Compendium. Global Forum for Rural Advisory Services, Switzerland. http://compendium.g-fras.org/

GoI. 2011. Report of the Working Group on Agricultural Extension for Agriculture and Allied Sectors for the Twelfth Five Year Plan (2012-17), Section V-Recommendations IV,73-74. http://planningcommission.gov.in/aboutus/committee/wrkgrp12/agri/wg_ agriextn.pdf

GoK. 2012. National Agricultural Sector Extension Policy (NASEP), Government of Kenya https://www.kenyamarkets.org/wp-content/uploads/2016/06/National-Agricultural-SectorExtension-2012.pdf

Howlett, M. 2005. What is a policy instrument? Tools, mixes, and implementation styles. Designing Government: From Instruments to Governance. 31-50. https://www.researchgate.net/publication/285756495_What_is_a_policy_instrument_Tools_ mixes_and_implementation_styles

IFAD. 2017. Country-level policy engagement in IFAD Guide book. International Fund for Agricultural Development. https://www.ifad.org/documents/38714170/39144386/CLPE_book_170412_W.pdf/a203813d8918-43ac-a94c-ad700bcca036

IFAD. 2017. How to incorporate policy engagement into a Country Strategic Opportunities Programme (COSOP)-Country-level policy engagement toolkit. International Fund for Agricultural Development. https://www.ifad.org/documents/38714170/39144386/CLPE_HTDN_COSOP_web.pdf/ 1037e846-dcd3-4c7d-9764-edc08eb4950b

John Y, Shaxson L, Jones H, Hearn S, Datta and Cassidy C. 2014. Rapid Outcome Mapping Approach. A guide to policy engagement and influence. Overseas Development Institute. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9011.pdf

 Klaus von Grebmer. 2014. Converting Policy Research into Policy Decisions: The Role of Communication and the Media. IFPRI. https://www.ifpri.org/cdmref/p15738coll2/id/64522/filename/64523.pdf

March SP, Pannell DJ. 2000. Agricultural Extension Policy in Australia: the good, the bad and the misguided. The Australian Journal of Agricultural and Resource Economics. 44: 4, 605-627. http://ageconsearch.umn.edu/bitstream/117854/2/1467-8489.00126.pdf

Michael Mintrom. n.d. Public Policy: Why ethics matters. Doing ethical policy analysis. http://press-files.anu.edu.au/downloads/press/p80991/html/ch03.xhtml?referer=375& page=6

MoA&FW.2017. Report of the Committee on Doubling Farmers' Income: Empowering the Farmers through Extension and Knowledge Dissemination, Volume XI, Ministry of Agriculture & Farmers Welfare, New Delhi. http://agricoop.gov.in/sites/default/files/DFI%20Volume%2011.pdf

MoAFF. 2015. Agricultural Extension Policy in Cambodia. Ministry of Agriculture, Forestry, and Fisheries. http://extwprlegs1.fao.org/docs/pdf/cam152453.pdf

MoAF. 2008. Policy Framework for Agricultural Extension in Timor Leste, Agricultural Rehabilitation Project III, Ministry of Agriculture and Fisheries, Dili, Timor Leste. https://g-fras.org/en/2015-05-28-15-50-27/australia-20.html?download=329: policyframework-for-agricultural-extension-in-timor-leste

MoAA&HF. 2016. National Agricultural Extension Policy of Uganda, Ministry of Agriculture, Animal Industry and Fisheries, The Republic of Uganda. https://nutrition.opm.go.ug/wp-content/uploads/2017/06/National-Agriculture-ExtensionPolicy.pdf

Mwamakamba S. 2016. Policy Advocacy for Rural Advisory Services. Module 15. New Extensionist Learning Kit. Global Forum for Rural Advisory Services. http://www.g-fras.org/en/component/phocadownload/category/70-new-extensionist-learningkit-nelk.html?download=664: module-15-policy-advocacy-for-rural-advisory-servicesmanual5

NAEP. 2012. National Agricultural Extension Policy. Government of the People's Republic of Bangladesh. Ministry of Agriculture. https://dae.portal.gov.bd/sites/default/files/files/dae.portal.gov.bd/page/dd7d2be1_aeef_452f_9774_8c23462ab73a/National%20Agricultural%20Extension%20Policy_%28NAEP%29.pdf

Nicholas J Sitko, Babu S, and Hoffman B. 2017. Practitioner's Guidebook and Toolkit for Agricultural Policy Reform: The P.M.C.A. Approach to Strategic Policy Engagement. Research Paper 49. Feed the Future Innovation Lab for Food Security Policy. https://www.ifpri.org/cdmref/p15738coll2/id/131127/filename/131338.pdf

ODI. 2004. Bridging Research and Policy in International Development- An analytical and practical framework. Briefing Paper. Overseas Development Institute. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/198.pdf

Paul A S. 1987. Knowledge, Policy-Oriented Learning, and Policy Change: An Advocacy Coalition Framework. Science Communication8: 649. DOI: 10.1177/0164025987008004005 https://dokumen.tips/download/?url=540f2870a41d106fd6b4f488025fcae1a3d2b6e30f47 a1fd4b24faa014d1faffa8761297009947bbedc0238800f8002c059c70b2b1822c907 3b4228fc10d1c70EclGpe0XdPZz3Xvyo6vyP75kIJsIt/ulHaimMrK38Q9TGEL0at8BX9Dj dER/8RDlh/DJpiqGHeJfRq+6GbXfimIiyR27rnjntLue4IInS63ip3IBqRfUlemI+oBl1SIJ

Picciotto. R. 2004. Policy Coherence and Development Evaluation Concepts, Issues and Possible Approaches. OECD. http://www.oecd.org/pcd/31659358.pdf

Richard KC.2014. Policy Analysis for Social Workers. Sage Publication. http://dx.doi.org/10.4135/9781544303550

Sharma R.2002. Reforms in Agricultural Extension: New Policy Framework. Economic and Political Weekly. Vol. 37, No. 30 pp. 3124-3131. https://www.epw.in/journal/2002/30/review-agriculture-review-issues-specials/reforms- agricultural-extension.html

Sprechmann. S and Pelton. E 2001. Advocacy Tools and Guidelines Promoting Policy Change. Cooperative for Assistance and Relief Everywhere, USA. https://onthinktanks.org/wp-content/uploads/2016/01/CARE_Advocacy_Guidelines.pdf

Start D and IngieHovland. 2004. Tools for Policy Impact: A Handbook for Researchers. Overseas Development Institute. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/194.pdf

Sulaiman RV and Hall A. 2005. Extension Policy at the National Level in Asia. Plant Production Science Vol 8, 308-319. https://www.tandfonline.com/doi/pdf/10.1626/pps.8.308

Sulaiman RV. 2014. How to Develop and Implement Extension Policies? Lessons from Four Australasian Countries. Global Forum for Rural Advisory Services, Switzerland http://compendium.g-fras.org/component/phocadownload/category/27-checklists-stepwiseapproaches.html?download=263: how-to-develop-and-implement-extension-policies-lessonsfrom-four-australasian-countries

The Policy Project. 1999. Networking for Policy Change An Advocacy Training Manual. The Futures Group International, Research Triangle Institute (RTI) and The Centre for Development and Population Activities (CEDPA). http://www.policyproject.com/pubs/AdvocacyManual.pdf

I. Course Title : Methodologies for Social and Behavioural Research

II. Course Code : EXT 602

III. Credit Hours : 2+1

IV. Why this course? In general, social and behavioural science research plays a crucial role in the professional development in a subject domain, through advancing knowledge and developing working modalities and standards. Precisely, the empirical research helps to develop robust and outcome focused working strategies, processes and models to enable the professionals to maximise their efficiency. This course on advanced social science research caters to the need to equipping the scholars with essential skills in conducting high quality research which helps them to design working strategies, processes and models for professional development. V. Aim of the course This course aims to equip the doctoral students to conduct outcome-oriented social and behavioural science research and to develop sound field focused extension strategies and models with adequate replicability, while advancing knowledge on processes governing success of those strategies. The focus of the course is on equipping the scholars with advanced capacities in conducting systematic, objective and outcome oriented research by applying state-of-art methods and tools at every stage of research from planning to publishing. The course is organized as follows: No Blocks Units 1. Advanced methods for improving 1. Measurement Properties of Research quality of research data Instruments 2. Threats to Data Quality 2. Scales, indexes and tests 1. Scales, Indexes and Tests-1 2. Scales, Indexes and Tests-2

Block Number	Lecture Number	Topic	Weightage	Total
Block 1: Advanced Methods for Improving Quality of Research Data	**Unit 1: Measurement Properties of Research Instruments**			
	1-2	Measurement properties – Dimensionality, reliability and validity; Dimensionality – Unidimensionality and multidimensionality, Methods of assessing dimensionality, Formative and reflective constructs; Validity - Importance, Internal validity - face validity; content validity, Substantive Validity, Structural Validity; External validity - Convergent and Discriminant Validity, known-group validity, Criterion-Related Validity, Consequential Validity,	10	10
	3-4	Nomological validity; Methods of assessing various forms of validities – Judges rating, Lawshe's Content Validity Ratio, Item-objective congruence index; latent variable method; Reliability - Internal consistency reliability – Split-Half, Cronbach alpha;	10	10

		Temporal Stability reliability - test-retest method; Interrater Consistency and Consensus – inter rater reliability and interrater agreement; Alternative Forms or parallel forms reliability – Reliability of difference - Factors Affecting the Validity and Reliability of Test Scores; Generalizability Theory		
	Unit 2: Threats to Data Quality			
	4	Errors and biases; Errors – Meaning and sources; Types - Sampling error, Nonsampling or measurement error and Processing error – Meaning, causes; Effects of errors and biases on data quality;	05	05
	5	Bias in behavioural research – Meaning, causes, Types – Respondent and researcher biases; Methods of reducing errors and biases in surveys, questionnaires, personal interviews, focus groups and online methods	05	05
Block 2: Scales, Indexes and Tests	**Unit 1: Scales, Indexes and Tests-1**			
	6	Approaches to measurement and scale development - Classical test theory. Formative or index models, The C–OAR–SE approach and Item Response Theory; Item analysis in Classical test theory – item difficulty and item discrimination;	05	05
	7	Scoring performance in scales and tests – meaning, types and methods; Scale development strategies – deductive and empirical; Stimulus-centred scales – method of equally appearing intervals, paired comparison, Person scaling – Q methodology; Subjectcentre scales – The Likert scale and Semantic Differential	05	05
	Unit 2: Scales, Indexes and Tests-2			
	8	Steps in constructing a multi-	05	05

		dimensional scale using confirmatory factor analysis,; Response scales - Guttman's scalogram analysis and The Rasch method; Indexes – Meaning, types, importance; Similarities and differences with scales, Methods of constructing indexes; Common indexes used in extension.		
	9	Measurement invariance – Meaning, types, methods of assessing measurement invariance. Tests – meaning, types, importance; steps in conducting various tests – knowledge test	05	05
Block 3: Emerging Research Approaches and Designs	**Unit 1: Qualitative Research Methods**			
	10	Qualitative methods – Meaning; Types – Ethnography, Grounded theory, Phenomenology, Ecological psychology, Discourse Analysis; Observational research; Case study research Sampling and sample size; Data collection methods - Indepth interviews, Focus groups, Direct observation, Record review; Content analysis; Unobtrusive Measures; Projective and semi-projective techniques;	10	10
	11	Selecting right qualitative method – Strengths and limitations of qualitative research; Analysis and interpretation of qualitative research data; Research synthesis – meaning, importance, methods; Systematic reviews and meta analysis – meaning, steps, and applications; Policy research	10	10
	Unit 2: Emerging Approaches			
	12	Mixed methods research – meaning, purpose, types and applications; Participatory research – Meaning,	05	05

		importance, types, methods and tools and applications; Action research – Meaning, importance, Principles, Types, Steps in conducting action research, application in behavioural sciences		
	13	Social Network Analysis – Meaning, importance, types, steps in social network analysis, applications; Advanced methods of measuring perception and beliefs. Multi criteria decision making, analytical hierarchy approach	10	10
Block 4: Utilising Research Outputs	**Unit 1: Publishing Research**			
	14	Scholarly communication process; Research reports – Meaning, types, contents; Presentations – Meaning, types, principles of good presentation - Tell 'Em" and KISS 'Em" principles	05	05
	15	Research publications – meaning, importance, types; Guidelines for preparing research papers - Peer review process, citation styles; Open access publishing; Publishing in social media. Software in academic writing	05	05
	Unit 2: Ethics in Extension Research			
	16	Ethics in conducting behavioural research; Human subject research – Meaning, history, and ethical guidelines; Ethical aspects of collecting and using Indigenous knowledge and farmers technologies; Ethical practices in publishing; Plagiarism – meaning, sources, Identifying and correcting plagiarism in a research paper using anti-plagiarism software	05	05

VII. Practicals
• Practice in developing research instruments
• Methods of assessing measurement properties of research instruments - dimensionality, reliability and validity
• Hands-on exercise in minimising errors and biases
• Hands-on experience in constructing tests, scale and indexes
 • Practice in summated scale development using confirmatory factor analysis
• Hands on experience in assessing measurement invariance
• Practicing and collecting data using participatory tools and techniques, analyzing and interpreting qualitative data
• Hands-on experience in writing systematic review using meta-analysis
• Field practice in conducting action research
• Practical experience in writing research paper
 • Hands on exercises using software for qualitative data analysis
• Practice in detecting and correcting plagiarism using software
VIII. Teaching methods/activities
– Lecture – Assignment (Reading/Writing)
– Student presentation
– Group Work
 – Guest Lectures
– Research Report (Writing)

IX. Learning outcome
– The scholars should develop critical skills in conducting systematic and objective research by using robust methods while minimising biases and errors
– The students should intelligently choose and apply advanced methods and tools at every stage of research and execute them in a objective way by managing the actors and processes effectively
– The students should develop expertise in designing tests, scales and indexes along with other tools to measure the socio-psychological processes at individual, group and community levels

X. Suggested Reading

Berg B. 2009. Qualitative Research. Methods for the Social Sciences. Boston: Allyn& Bacon.
Creswell JW .2007. Qualitative inquiry and research design: Choosing among five approaches (2nd ed.). Thousand Oaks, CA: SAGE Pub.
Edwards AL. 1957. Techniques of attitude scale construction. East Norwalk, CT, US: AppletonCentury-Crofts.
Furr, RM. 2011. Scale construction and psychometrics for social and personality psychology. Los Angeles: SAGE Pub.
Malhotra, NK. 2010. Marketing research: An applied orientation. Sixth Edition. Upper Saddle River, NJ: Prentice Hall Pub.
Netemeyer RG, Bearden WO and Sharma S. 2003. Scaling procedures: issues and applications. Thousand Oaks: SAGE Publications.

Nunnally, JC, and Bernstein IH. 1994. Psychometric theory (3rd ed.). New York, NY: McGraw

Hill Rao, C.R. and Sinharay S. 2007. Handbook of Statistics, Vol. 26: Psychometrics, The Netherlands; Elsevier Science B.V.

Raykov T and Marcoulides GA. 2010. Introduction to Psychometric Theory. New York, NY: Taylor & Francis

Scott J and Carrington PJ. 2011. The SAGE handbook of social network analysis. London: SAGE.

Sekaran U and Bougie R. 2013. Research Methods for Business A Skill-Building Approach. 6th Edition, Wiley, New York.

Sivakumar PS, Sontakki BS, Sulaiman RV, Saravanan R and Mittal N. (eds). 2017. Good Practices in Agricultural extension Research. Manual on Good Practices in Extension Research and Evaluation. Agricultural Extension in South Asia. Centre for research on innovation and science and policy (CRISP), Hyderabad. India. http://www.aesanetwork.org/wp-content/uploads/2018/07/6.pdf

Aim of the course

This course is aimed to develop a critical understanding among extension students about how the technology commercialization process is linked to IPR management and entrepreneurship development

Theory

Block 1: Technology Commercialisation and the Modern Context

Unit 1: Basics of technology commercialisation

Technology - Definition, functions, process of technological advancement – invention, discovery, innovation and technology; types of innovation - Basic research, Breakthrough innovation, Disruptive Innovation and Sustaining Innovation; Technology transfer and commercialisation

Unit 2: Nature of Agricultural Technology

Agricultural technology – meaning, types; technology generation system; technology life cycle

Unit 3: Basics of Technology transfer and commercialisation

Technology transfer Vs Commercialisation; Technology commercialisation process – elements, models, systems and processes; Technology transfer model – research, disclosure, development and commercialisation

Block 2: Intellectual Property Resources (Ipr) Management

Unit 1: Overview of Intellectual Property Resources

Introduction to IPR; Overview & Importance; Genesis; IPR in India and IPR abroad; Patents, copyrights, trademarks & trade secrets, geographical indication, industrial design; Emergence of IPR Regimes and Governance Frameworks - Trade-Related Aspects of Intellectual Property Rights (TRIPS), Convention on Biological Diversity (CBD), Cartagena Protocol, International Union for Protection of New Plant Varieties (UPOV), and BIMSTEC.

Unit 2: Systems for Protecting IP

IPR protection laws and systems – National IPR Policy; and IPR laws; procedures for filing IP protection; Systems of IP protection and management in agricultural universities and research institutions and also by stakeholders

Unit 3: Management of IPR

Mechanisms of IPR Management – Institutional arrangement, IP Management processes – invention disclosure; IP portfolio management; Infringement management

Unit 4: Protection and Management of Biological Resources

Introduction; National Biodiversity Act (2002); Protection of Plant Varieties and Farmers Rights Act (2001); Guidelines for registration and transfer of biological resources; Farmers rights; Mechanisms of documenting/ collecting, protecting and commercialising farmers varieties and other biological resources; National Biodiversity Authority, PPVFRA and other agencies involved in management of biological resources in India. Access to Genetic Resources and Sharing of Benefits

Unit 5: Protection, Management and Commercialisation of Grassrootand Farmers Innovations, Traditional and Indigenous Knowledge

Traditional and Indigenous Knowledge, Grassroot and Farmers Innovations – Meaning, forms and importance; Systems of documentation, registration, protection and commercialisation. Documentation of traditional indigenous knowledge - Traditional Knowledge Digital Library (TKDL), Community Biodiversity Registers (CBRs), People's Biodiversity Registers (PBRs), Plant Biodiversity Register, and Honeybee Network.

Unit 6: Geographical Indications (GI) and Appellation of Origin

Geographical indications and appellation of origin – meaning, origin; Geographical Indications of Goods (Registration and Protection) Act (1999); Documentation, registration and commercialisation of GI protected materials and processes.

Unit 7: Genetically Modified Organisms (GMO), Agriculture and Biosafety

The Global Concerns on Use of Genetically Modified Organisms in Food and Agriculture; The Cartagena Protocol on Bio-safety; Regulation of GMO in India - Recombinant DNA Advisory Committee (RDAC), Institutional Bio-safety Committee (IBSC), Review Committee on Genetic Manipulation (RCGM), Genetic Engineering Approval Committee (GEAC), State Bio-safety Coordination Committee (SBCC) and District Level Committee (DLC). Laws and Acts for regulation of GMO - Guidelines for Research in Transgenic Plants, 1998; Seed Policy, 2002; Plant Quarantine Order, 2003; Regulation for Import of GM Products Under Foreign Trade Policy, 2006; National Environment Policy, 2006

Block 3: Technology Commercialisation

Unit 1: Technology Assessment and Refinement

Meaning; Importance; Approaches and methods of assessment and refinement of various technologies – stakeholder oriented approaches including participatory technology assessment and refinement; assessment and refinement of traditional and indigenous knowledge and grassroot innovations

Unit 2: Technology Valuation

Returns to investment; IP Valuation-Oxford context, IP Valuation methods - Cost approach; Income approach - Discounted Cash Flow, Risk-Adjusted Net Present Value, Net Present Value with Monte Carlo Simulation and Real Options Theory; Market approach - Industry Standards Method, Rating/Ranking Method, Rules of Thumb Approach and Auction Method; Hybrid approaches; Royalty rate method

Unit 3: Technology Commercialisation Strategies

Meaning- approaches for technology commercialisation – technology scaling up, technology licensing, handholding, agripreneur development, technology business incubation

Unit 4: Scaling up of Technologies

Meaning, types and stages of technology scaling up; mechanisms

Unit 5: Technology Licensing

Meaning and types - Procedures of licensing, preparing licensing documents; Management of technology licensing process

Unit 6: Technology Takers and Entrepreneurship

Meaning; types of technology takers; Technology Taking as a Strategy; Types of entrepreneurship – agripreneurs, startups, small businesses, Producer Organizations, Self Help Groups, Clusters and other forms of entrepreneurship

Unit 7: Policy support for Technology Commercialisation and Entrepreneurship Development

Policy support for entrepreneurship development in India - National Policy on Skill Development and Entrepreneurship and other polices; Government of India Support for Innovation and Entrepreneurship – Startup India, Make in India, Digital India, Atal Innovation Mission and others; Entrepreneurship policy and schemes at different states of India; Organisations promoting entrepreneurship in India

Block 4: Technology Incubation

Unit 1: Basics of Technology Incubation

Meaning, functions and types; stakeholder oriented incubation process – Livelihood incubation, village incubators

Unit 2: Technology Incubation in India

System of technology incubation- incubation process; its effectiveness; Managing profit oriented and non-profit incubators; Schemes for promoting incubators in India

Block 5: Technology Promotion And Essential Skills For Technology Commercialisation

Unit 1: Technology Promotion

Technology promotion – meaning, types, business meetings, scientist-industry/ entrepreneur meets, technology conclave, business plan competition, farmers fairs, technology shows

Unit 2: Dealing with Entrepreneurs, Agripreneurs and Other Stakeholders

Business communication; Business Etiquette; business networking

Block 6: Emerging Approaches in Technology Commercialisation and Incubation

Unit 1: Technology Scouting

Technology Scouting and Innovations in technology incubation

Practicals

- Understanding the technology commercialization process – Visit to Technology Commercialization Unit of ICAR Institute/ Agricultural University
- Understanding the IPR protection practices – Visit to Patent Attorney office
- Hands-on experience in drafting IPR application – Patent/Copyright/ Trademark
- Understanding protection of biological resources including plant varieties – Visit to PPVFRA Branch office/ ICAR Institute or Agricultural University involved in plant variety protection
- Documenting Traditional and indigenous knowledge – Field experience in using various protocols of using traditional and indigenous knowledge
- Protecting unique local goods through Geographical Indications – Hands on experiences in documenting and registering Geographical indications
- Technology assessment/ validation of traditional and indigenous knowledge – QuIK and other methods
- Hands on experience in technology valuation
- Hands on experience in technology licensing process including drafting agreements
- Understanding the Technology Business Incubation – Visit to Agri Business Incubator or Technology Business incubator
- Hands on experience in planning and organising technology promotion events
- Hands on experience in various techniques in business communication and Business etiquette

LECTURE SCHEDULE
Theory

Sr. No.	Topic	No. of Lecture (s)
	Block 1: Technology Commercialization and the Modern Context	
	Unit 1: Basics of technology commercialization	
1	Technology - Definition, functions, process of technological advancement – invention, discovery, innovation and technology	1
2	Types of innovation - Basic research, Breakthrough innovation, Disruptive Innovation and Sustaining Innovation	1
3	Technology transfer and commercialization	
	Unit 2: Nature of Agricultural Technology	
4	Agricultural technology – meaning, types	1
5	Technology generation system; technology life cycle	
	Unit 3: Basics of Technology transfer and commercialization	
6	Technology transfer Vs commercialization	1
7	Technology commercialization process – elements, models, systems and processes	
8	Technology transfer model – research, disclosure, development and commercialization	1
	Block 2: Intellectual Property Resources (IPR) Management	
	Unit 1: Overview of Intellectual Property Resources	
9	Introduction to IPR; Overview & Importance; Genesis	1

Sr. No.	Topic	No. of Lecture (s)
10	IPR in India and IPR abroad	
11	Patents, copyrights, trademarks & trade secrets, geographical indication, industrial design	
12	Emergence of IPR Regimes and Governance Frameworks - Trade-Related Aspects of Intellectual Property Rights (TRIPS), Convention on Biological Diversity (CBD), Cartagena Protocol, International Union for Protection of New Plant Varieties (UPOV), and BIMSTEC	
	Unit 2: Systems for Protecting IP	
13	IPR protection laws and systems – National IPR Policy and IPR laws; procedures for filing IP protection	1
14	Systems of IP protection and management in agricultural universities and research institutions and also by stakeholders	
	Unit 3: Management of IPR	
15	Mechanisms of IPR Management – Institutional arrangement, IP Management processes – invention disclosure	1
16	IP portfolio management, Infringement management	
	Unit 4: Protection and Management of Biological Resources	
17	Introduction; National Biodiversity Act (2002)	1
18	Protection of Plant Varieties and Farmers Rights Act (2001)	
19	Guidelines for registration and transfer of biological resources, Farmers rights	
20	Mechanisms of documenting/ collecting, protecting and commercialising farmers varieties and other biological resources	
21	National Biodiversity Authority, PPVFRA and other agencies involved in management of biological resources in India	
22	Access to Genetic Resources and Sharing of Benefits	
	Unit 5: Protection, Management and commercialization of Grassroot and Farmers Innovations, Traditional and Indigenous Knowledge	
23	Traditional and Indigenous Knowledge	1
24	Grassroot and Farmers Innovations – Meaning, forms and importance; Systems of documentation, registration, protection and commercialization	
25	Documentation of traditional indigenous knowledge - Traditional Knowledge Digital Library (TKDL), Community Biodiversity Registers (CBRs), People's Biodiversity Registers (PBRs), Plant Biodiversity Register, and Honeybee Network	
	Unit 6: Geographical Indications (GI) and Appellation of Origin	
26	Geographical indications and appellation of origin – meaning, origin Geographical Indications of Goods (Registration and Protection) Act (1999)	1
27	Documentation, registration and commercialization of GI protected materials and processes	
	Unit 7: Genetically Modified Organisms (GMO), Agriculture and Biosafety	
28	The Global Concerns on Use of Genetically Modified Organisms in Food and Agriculture; The Cartagena Protocol on Bio-safety	1
29	Regulation of GMO in India - Recombinant DNA Advisory Committee (RDAC), Institutional Bio-safety Committee (IBSC), Review Committee on Genetic Manipulation (RCGM), Genetic Engineering Approval Committee (GEAC), State Bio-safety Coordination Committee (SBCC) and District Level Committee (DLC)	
30	Laws and Acts for regulation of GMO - Guidelines for Research in Transgenic Plants, 1998	
31	Seed Policy, 2002; Plant Quarantine Order, 2003; Regulation for Import of GM Products Under Foreign Trade Policy, 2006; National Environment Policy, 2006	

Sr. No.	Topic	No. of Lecture (s)
	Block 3: Technology commercialization	
	Unit 1: Technology Assessment and Refinement	
32	Meaning; Importance	1
33	Approaches and methods of assessment and refinement of various technologies – stakeholder oriented approaches including participatory technology assessment and refinement	
34	Assessment and refinement of traditional and indigenous knowledge and grassroot innovations	
	Unit 2: Technology Valuation	
35	Returns to investment, IP Valuation-Oxford context	1
36	IP Valuation methods - Cost approach; Income approach - Discounted Cash Flow, Risk-Adjusted Net Present Value, Net Present Value with Monte Carlo Simulation and Real Options Theory, Market approach - Industry Standards Method, Rating/Ranking Method, Rules of Thumb Approach and Auction Method; Hybrid approaches; Royalty rate method	
	Unit 3: Technology Commercialization Strategies	
37	Meaning- approaches for technology commercialization – technology scaling up, technology licensing, handholding, agripreneur development, technology business incubation	1
	Unit 4: Scaling up of Technologies	
38	Meaning, types and stages of technology scaling up; mechanisms	1
	Unit 5: Technology Licensing	
39	Meaning and types - Procedures of licensing, preparing licensing documents; Management of technology licensing process	1
	Unit 6: Technology Takers and Entrepreneurship	
40	Meaning; types of technology takers	1
41	Technology Taking as a Strategy	
42	Types of entrepreneurship – agripreneurs, startups, small businesses, Producer Organizations, Self Help Groups, Clusters and other forms of entrepreneurship	
	Unit 7: Policy support for Technology Commercialization and Entrepreneurship Development	
43	Policy support for entrepreneurship development in India - National Policy on Skill Development and Entrepreneurship and other polices	1
44	Government of India Support for Innovation and Entrepreneurship – Startup India, Make in India, Digital India, Atal Innovation Mission and others	
45	Entrepreneurship policy and schemes at different states of India; Organisations promoting entrepreneurship in India	
	Block 4: Technology Incubation	
	Unit 1: Basics of Technology Incubation	
46	Meaning, functions and types	1
47	Stakeholder oriented incubation process – Livelihood incubation, village incubators	
	Unit 2: Technology Incubation in India	
48	System of technology incubation- incubation process; Its effectiveness	1
49	Managing profit oriented and non-profit incubators	
50	Schemes for promoting incubators in India	
	Block 5: Technology Promotion And Essential Skills For Technology Commercialization	
	Unit 1: Technology Promotion	
51	Technology promotion – meaning, types, business meetings, scientist-industry/ entrepreneur meets, technology conclave, business plan competition, farmers fairs, technology shows	1

Sr. No.	Topic	No. of Lecture (s)
	Unit 2: Dealing with Entrepreneurs, Agripreneurs and Other Stakeholders	
52	Business communication; Business Etiquette; business networking	1
	Block 6: Emerging Approaches in Technology Commercialization and Incubation	
	Unit 1: Technology Scouting	
53	Technology Scouting and Innovations in technology incubation	1

Practical

Sr. No.	Topic	No. of Practical (s)
1	Understanding the technology commercialization process – Visit to Technology Commercialization Unit of ICAR Institute/ Agricultural University	1
2	Understanding the IPR protection practices – Visit to Patent Attorney office	1
3	Hands-on experience in drafting IPR application – Patent/Copyright/ Trademark	1
4	Understanding protection of biological resources including plant varieties – Visit to PPVFRA Branch office/ ICAR Institute or Agricultural University involved in plant variety protection	2
5	Documenting Traditional and indigenous knowledge – Field experience in using various protocols of using traditional and indigenous knowledge	2
6	Protecting unique local goods through Geographical Indications – Hands on experiences in documenting and registering Geographical indications	1
7	Technology assessment/ validation of traditional and indigenous knowledge – QuIK and other methods	2
8	Hands on experience in technology valuation	1
9	Hands on experience in technology licensing process including drafting agreements	1
10	Understanding the Technology Business Incubation – Visit to Agri Business Incubator or Technology Business incubator	2
11	Hands on experience in planning and organising technology promotion events	1
12	Hands on experience in various techniques in business communication and Business etiquette	1
	TOTAL	**16**

Suggested Reading

Bandopadhyay D. 2018. Securing Our Natural Wealth: A Policy Agenda for Sustainable Development in India and for Its Neighbouring Countries. Singapore; Springer.

Ghosh, S. and Joshi, A. 2017. Handbook for Non-Profit Incubator Managers. New Delhi: Deutsche Gesellschaftfür Internationale.

Gupta AK. 2016. Grassroots Innovation: Minds on the margin are not marginal minds. Gurgaon: Penguin Books.

ICAR.2018. ICAR Guidelines for Intellectual Property Management and Technology Transfer/ Commercialization (Revised in 2018). Indian Council of Agricultural Research, New Delhi.

Pandey N and Dharni K. 2014. Intellectual Property Rights. Delhi. PHI Learning Pvt. Ltd.

Sharma G and Kumar H. 2018. Intellectual property rights and informal sector innovations: Exploring grassroots innovations in India. The Journal of World Intellectual Property. 1- 17. DOI: https://doi.org/10.1111/jwip.12097.

Stevens AJ. 2016. Intellectual property valuation manual for academic institutions (Report No. CDIP/17/INF/4). Geneva: Committee on Development and Intellectual Property (CDIP).

WIPO and ITC. 2010. Exchanging Value – Negotiating Technology Licenses, A Training Manual. World Intellectual Property Organization (WIPO).

Course Title : Educational Technology and Instructional Design

Course Code : EXT 604

Credit Hours : 2+1

IV. Why this course?

Technology, digital media and mobile access have drastically changed how people learn. And the field of education is rapidly becoming a dynamic opportunity for interactive instruction. Today's curriculum developers and instruction designers, especially in the extension and RAS ecosystem, need to equip themselves with the continuous developments in both theory and practice of instructional design so as to create satisfying learning experiences. Similarly, knowledge and skilful use of social media and disruptive technologies like internet of things (IOT), augmented reality, artificial intelligence, etc. makes this course essential for extension professionals who are expected to act as harbingers of change.

V. Aim of the course The aim is to develop knowledgeable, responsive and effective teachers committed to educating diverse group of learners in a dynamic extension landscape. This course will help the learners to appreciate the role of technology in learning and how it can be integrated into instructional design to create engaging learning experience in both classroom and online learning environment. The course also aims to prepare the students as competent professionals employable in the extension and RAS providers both as specialised researchers as well as designers.

Block Number	Lecture Number	Topic	Weightage	Total
Block 1: Educational Technology	**Unit 1: The Landscape of Educational Technology and Instructional Design**			
	1-2	Understanding various terms - educational technology, instructional design, instructional systems design, curriculum design, pedagogy, andragogy; Brief overview of the origin and evolution of ET and ID as theory and practice	10	10
	3-4	what is the relevance of ET and ID relevant in extension and rural advisory services? Extensional professionals as instructional designers and architects of the learning experience	10	10
	Unit 2: Theories of Learning			
	4-5	What is learning? Critical overview of Behaviorism, Cognitivism, Constructivism and Complex learning theories; instructional designers and learning theories; Types of learning or learning domains-	05	05

	6-7	Bloom's taxonomy of the cognitive domain, Krathwohl and Bloom's affective domain and Simpson's psychomotor domain	05	05
	Unit 3: Technology Enabled Learning			
	8-9	What is the role of technology in education? Digital media, new tools and technology; Open and distance Learning (ODL); Online Education - Synchronous and Asynchronous learning models; eLearning	05	05
	10-11	Massive Open Online Courses - SWAYAM, Open Education Resources (OERs), Course CERA, EduEx, CoL, RLOs; digital education and its applications in higher agricultural education; Smart classrooms and Campuses, Web-based remote laboratory (WBRL)	10	10
		Integrating media and digital tools into ID; types and implications of disruptive technologies for higher education and extension; Augmented learning; Adaptive learning; meaning, features and good practices in using open source Learning Management Systems (Moodle); Quality assurance and certification in e-learning.		
Block 2: Instructional Design	**Unit 1: Theories and Models of Instruction**			
	12-13	Howard Gardner's Theory of Multiple Intelligences, David Kolb's Experiential Learning Cycle, Albert Bandura's Social Learning Theory, Rand Spiro's Cognitive Flexibility Theory and Its Application In eLearning	05	05
	14-15	Wlodkowski's Motivational Framework for Culturally Responsive Adult Learning;	05	05

		ADDIE Model, Dick and Carey Model, SAM Model, Bloom's Taxonomy; integrating the theories of instruction into the practice of ID in extension and RAS ecosystem.		
	Unit 2: Creating Instruction			
	16-17	Overview of planning, designing and implementing the curricula and learning experiences; Needs Analysis - meaning, approaches and steps; Task and content analysis - meaning, approaches, steps and techniques (topic analysis, procedural analysis, and the critical incident method);	10	10
	18-19	Learner analysis – meaning, importance and approaches, relevance of Maslow's Hierarchy of Needs and learning styles, Captive Audience vs. Willing Volunteers, Universal vs. user-centered design, Learner Analysis Procedures; Writing learning objectives:	05	05
	20-21	Meaning of Learning Goal and Learning Objectives; ABCDs of well-stated objectives; Setting goals, translating goals into objectives; Contextualising ADDIE process within the Extension learning environment		
	Unit 3: Instructional Strategies			
	22-23	events of instruction, Edgar Dale's Cone of Experience	05	05
	24-25	Methods of Delivery- classroom teaching, programmed instruction, synchronous and asynchronous modes of distance education; Changing role of a teacher in classroom and teaching competencies	05	05
	Unit 4: Evaluating Instruction			
	26-27	Meaning of Assessment, Measurement and Evaluation; Developing learner evaluations	05	05

		and their reliability & validity; assessment techniques for measuring change in knowledge,		
	28-29	skill and attitude of learners - Objective Test Items, Constructed-Response Tests, Direct Testing, Performance Ratings, Observations and Anecdotal Records, Rubrics, Portfolios, Surveys and Questionnaires	05	05
	30-31	SelfReporting Inventories, Interviews; Conducting learner evaluation pre-, during and post-instruction; Formative and Summative Evaluation-meaning, approaches and steps; Evaluating Learner Achievement and the Instructional Design Process; Evaluating the success of instruction; Performance appraisal of teachers	10	10
Unit 5: Trends in Instructional Design				
	32	Alternatives to ADDIE model - Rapid prototyping and constructivist ID, reflections on instructional design as science and as an art; Relating ID models and process in extension learning environment political economy of higher education in developed and developing countries; University assessment and rating methods, returns from agricultural higher education; research in education and instructional design.	05	05

VII. Practicals

• Exercises on preparation of the Analysis Report that includes the task/content analysis and learner analysis and the Design Plan includes learning objectives and corresponding instructional strategies and assessment items

• Prepare course outline and lesson plan with an appreciation for diverse learning styles based on temperament, gender, and cultural/ethnic differences and deliver a lecture for UG/PG students

• Assessing learning styles through Barsch and Kolb inventories

• Development and testing of survey instruments for evaluating learning outcomes/ competencies of students

• Development and testing of survey instruments for performance appraisal / competency assessment of teachers.

• Design an online e-learning module on a topic of interest as a capstone project - integrate and apply the knowledge and skills gained from the course for creating an effective learning experience for a target audience

• Designing and developing a theme based knowledge portals

 • Exercises on designing an online course using open source LMS like moodle or EdX

• Select and evaluate or design for social al media

• Prepare a short research paper on recent theories and models of instructional design

• Interview an instructional designer of your choice and prepare a synthesis report about what job roles he/she perform, What ID processes does he or she use, challenges faced

• Develop a prototype for one of the lessons in your design plan using PowerPoint or a website builder such as Weebly to create the screens integrating multimedia content and various functionalities

• Field visit to a virtual learning / augmented learning labs, e-learning labs, distance learning centres, etc.

• Hands-on practice with video-editing software, web conferencing and video conferencing solutions

VIII. Teaching methods/activities

– Lectures & Videos

 – Individual and group assignments

 – Group discussion and debating

 – Enactive learning exercises

– Case studies / Case analysis

– Storyboarding

– Guest Lectures

– Field Visits

– Capstone Project

 – Prototype development

 IX. Learning outcome After successful completion of this course, the students are expected to be able to: – Develop a critical understanding of concepts of learning and education within the context of agricultural development – Relate and apply learning theories and models to the development, design and evaluation of courses utilizing educational technology and instructional design – Hone their skills to take up research work in analysing and evaluating different learning systems, teaching-learning environments, competencies and learning outcomes – Find placement opportunities in the industry for job profiles such as e-learning specialist, training officer, curriculum developer, instructional designer, education consultant, etc. X. Suggested Reading Agarwal JC. 2007. Essentials of Educational Technology Innovations in Teaching – Learning. 2nd Ed. Vikas Publ. House. Allen M. 2013. Leaving ADDIE for SAM: An Agile Model for Developing the Best Learning Experiences https://www.alleninteractions.com/about Anglin GJ (Ed.), 1995. Instructional technology: Past, present, and future. Englewood, CO: Libraries Unlimited. Anonymous. 2000. Contents Pages of the Journal Educational Technology from January, 2OO0 to December, 2O15 Volume 40-Volume 55 http://publicationshare.com/pdfs/ET-Contents-Pages-2000-2015.PDF Bandura A. 1977. Social learning theory. Englewood's Cliffs, NJ: Prentice-Hall Bandura A. 2001. Social cognitive theory: An agentic perspective. Annual Review of Psychology, 52, 1–26 Britain S. 2004. A Review of Learning Design: Concept, Specifications and Tools. A report for the JISC E-learning Pedagogy Programme, May 2004. Brown AH and Timothy DG. 2016. The essentials of instructional design: connecting fundamental principles with process and practice, Third edition, Routledge https://ikhsanaira.files.wordpress.com/2016/05/the-essential-of-instructional-design.pdf Challa J and Reddy NM. 2008. Education Technology for Agricultural Sciences, NAARM, Rajendra Nagar, Hyderabad, Telangana, India. David HJ. 2003. Learning to Solve Problems: An Instructional Design Guide. Duffy TM and Cunningham DJ. 1996. Constructivism: Implications for the design and delivery of instruction. In Jonassen D (Ed.), Handbook of Research for Educational Communications and Technology (pp. 170-198). New York: Simon & Schuster Macmillan Edward T. 2013. Power Point Is Evil. https://www.wired.com/2003/09/ppt2/ Ellen R. 2004. Instructional Design and Curriculum Development: Deconstructing the Difference, Educational Technology, Vol. 44, No. 2 (March-April 2004), pp. 3-12. https://www.jstor.org/stable/44428883 Gardner H. 2008. Multiple intelligences: New horizons in theory and practice. New York, NY: Basic Books. Gayle VDS, Karen LR, Patrick RL. 2018. Web-Based Learning: Design, Implementation and Evaluation, 2nd Edition Hsu YC, Hung JL, and Ching YH. 2013. Trends of educational technology research: More than a decade of international research in six SSCI-indexed refereed journals. Educational Technology Research and Development, 61(4), 685-705. https://www.academia.edu/1141731/Aesthetic_principles_for_instructional_design?auto=download James ML. 2006. Small Teaching: Everyday Lessons from the Science of Learning Kolb D. 2014. Experiential learning: Experience as the source of learning and development (2nd ed.). Upper Saddle River, NJ: Prentice Hall Koper R. 2006. Current Research in Learning Design, Educational Technology & Society, 9 (1), 13–22. Kozma RB. 1994. Will media influence learning? Reframing the debate. Educational Technology Research & Development, 42(2), 7-19. Merrill MD, Drake L, Lacy M J and Pratt J. 1996. Reclaiming instructional design (PDF). Educational Technology. 36 (5): 5–7. Archived (PDF) from the original on 2012-04-26. Parrish PE. 2007. Aesthetic principles for instructional design, Education Technology Research and Development, DOI 10.1007/s11423-007-

9060-7 Parrish PE. 2005. Embracing the aesthetics of instructional design. Educational Technology, 45(2), 16–25. Reiser RA, Mackal M, and Sachs SG . 2005. Textbooks used in graduate programs in instructional design and technology: Changes over the past twelve years. Educational Technology, 45(5), 53-61. Reiser RA. 2001. A History of Instructional Design and Technology: Part I: A History of Instructional Media. Educational Technology Research and Development, 49 (1), 53-64. Reiser RA. 2001. A History of Instructional Design and Technology: Part II: A History of Instructional Design. Educational Technology Research and Development, 49 (2), 57-67. Spector JM, Merrill MD, Elen J and Bishop MJ. (Eds.), 2014. Handbook of research on educational communications and technology (4th ed.). New York: Springer. Spector JM. 2015. Foundations of educational technology: Integrative approaches and interdisciplinary perspectives. Routledge. Spiro R. 2018. Cognitive Flexibility Theory & the Post-Gutenberg Mind: Rand Spiro's Home Page, https://postgutenberg.typepad.com/newgutenbergrevolution/?utm_campaign=elearning industry.com&utm_source=%2Fcognitive-flexibility-theory&utm_medium=link Tennyson R, Dijkstra S, Schott F and Norbert S. 1997. Instructional Design: International Perspectives. Theory, Research, And Models. Vol. 1. Mahwah, NJ: Lawrence Erlbaum Associates, Inc. p. 42. ISBN 0805814000. The Encyclopedia of Educational Technology. What is Educational Technology? http://www.etc.edu.cn/eet/eet/articles/edtech/index.htm Wlodkowski, Raymond J. 2008. Enhancing adult motivation to learn: a comprehensive guide for teaching all adults, 3rd ed., The Jossey-Bass higher and adult education series http://ekladata.com/iJLoOLufKEurVuG5mA2Ke1rJ5dQ/-Raymond_J._Wlodkowski-_Enhancing_adult_ motivation-Bokos-Z1-.pdf Websites e-Learning Industry– https://elearningindustry.com/ Instructional Design Central– https://www.instructionaldesigncentral.com/ Instructional Design– http://www.instructionaldesign.org/theories/ International Society for Educational Technology– https://www.isfet.org/courses/ Educational Technology– https://educationaltechnology.net/ AESA-Agricultural Extension in South Asia– http://www.aesanetwork.org/ GFRAS-Global Forum for Rural Advisory Services– http://www.g-fras.org/en

EXT 605 Risk Management and Climate Change Adaptation (2+1)

Objective

By the end of the course students will be able to

- Understand basic concepts of risks management and climate change adaptations in the context of Indian Agriculture.
- Analyse ways to reducing/managing risk and distress in Indian agriculture.
- Understand social-psychological and behavioural dimensions of farmers under risk/distress and acquire skills required to help farmers manage farm level risks.
- Conduct vulnerability assessment of farmers to climate change and identify and select appropriate adaptation options.
- Prepare evidence-based intervention plans for vulnerability reduction at micro and macro-levels.
- Identify, evaluate and evolve ways to address (mitigate and manage) risks and climate change.

Theory

Block	Unit No.	Lecture No.	Topic	Weight age
Block 1: Risk Management in Agriculture	Unit 1: Understanding Risk and Distress	1	Introduction to risk, risk management, uncertainty, sensitivity and distress,	3
		2	General risk theory, Risk analysis methods, Risk perception and decision making,	3
		3	Indicators of risk and distress in agriculture – identification, selection and assessment	3
		4	Understanding the agrarian distress in Indian agriculture, Sources of distress in Indian farming -changing farm size, land use, cropping patterns, pricing policy, markets and terms of trade,	4
		5	Typology of crisis in agriculture; Droughts, floods and Indian agriculture,	3
		6	Distress and farmer suicides - causes and socio-economic consequences	3
	Unit 2: Managing Risk and Distress	7-9	Ways to reducing/managing risk and distress in Indian agriculture; crop and life insurance; Developing support systems; Planning, implementation and evaluation of risk/distress management programs; Institutional frameworks for risk and disaster management - NDMA & SDMAs; Developing District Agriculture Contingency Plans; Risk management by diversification; Good practices and lessons from other countries;	10
		10	Responses of government, non-government and extension system to agrarian crisis; National Farmers Policy.	3
	Unit 3: Extension Professionals and Risk management	11	Understanding social-psychological and behavioural dimensions of farmers under risk/distress; Risk perception and communication;	4
		12	Helping farmers manage farm level risks - mobilising resources, linking with markets, strengthening capacities; Working with village level risk management committees; Operational skills for preparing contingency and disaster management plans;	3
		13	Institutional and extension innovations in managing risk and distress; Policy and technological preferences for dealing with drought and flood.	3
Block 2: Adapting to Climate Change	Unit 1: Introduction to Climate Change Science	14	Basic concepts of and terms in climate change science;	3
		15	impacts of climate change; anthropogenic drivers of climate change,	3
		16	Climate change and Indian agriculture;	3
		17	climate adaptation vs. disaster risk reduction; anticipated costs of adaptation; climate change and poor;	3
		18	Overview of UNFCCC framework and institutions, Kyoto Protocol and beyond;	3
		19	India's National Action Plan on Climate Change and National Mission on Strategic Knowledge on Climate Change; National Coastal Mission,	3
		20	Institutional arrangements for managing climate change agenda.	3
	Unit 2: Introduction to Climate Change Adaptation and Mitigation	21-22	Introduction to Climate Change Adaptation, conducting a vulnerability assessment (CVI and SEVI frameworks), Identifying and selecting adaptation options;	6
		23	Global, national and state level initiatives and plans to support climate change adaptation, private sector and civil society initiatives and activities;	3
		24	Mainstreaming climate change adaptation into development planning, Financing climate adaptation and budgetary allocations for programmes,	3
		25	Gender and climate change adaptation,	3
		26	Agricultural development programmes and strategies towards climate change adaptation and mitigation, Community based and Ecosystem based adaptation strategies,	3
		27	Preparing evidence-based intervention plans for vulnerability reduction at micro and macro-levels.	3
	Unit 3: Climate Smart Agriculture (CSA) and Extension & Advisory Services	28	Climate smart agriculture; Developing climate smart and climate resilient villages;	3
		29	Stakeholders and determinants involved in climate smart agriculture;	3
		30	Climate smart agriculture and EAS; Innovative extension approaches used in CSA; Climate information services,	4
		31	Farmers perceptions about climate change; Farm and household level manifestations and adaptation strategies; Barriers and limits to adaptation; Farmers feedback on performance of extension methods;	3
		32	Skills, competencies and tools required for extension professionals at different levels and development departments in up scaling CSA	3

Practical

- Hands-on practice in using risk assessment/analysis tools
- Case studies on risk / distress assessment in agriculture -Indian and global
- Lessons / Experiences from NICRA Project in agriculture and allied sectors
- Developing criteria, indicators and indices for assessment of risk, vulnerability and resilience
- Hands on practice on use of vulnerability and risk assessment tools and techniques
- Case studies on success stories of climate change adaptation and community-based initiatives
- Developing district and village level intervention plans for climate change adaptation
- Field Visits to State Disaster Management Authority
- Case studies on climate smart agriculture / villages from India and world
- Case studies on impact assessment of crop insurance programs, disaster management programs
- Capstone project on documenting ITKs and local practices related to reducing risk/ climate resilience agriculture

Suggested Readings

EXT 606 Livelihood Development (1+1)

Objective

By the end of the course students will be able to
- Understand the concept of livelihood and its various forms
- Analyse the various alternative approaches that has been adopted to support livelihoods
- Apply the methods, tools and techniques to design livelihood interventions
- Evaluate the context, especially the economic models and policy environment that guides the livelihood choices
- Work in multidisciplinary teams and engage at multiple levels on livelihood issues

Theory

Block	Unit	Lecture No.	Topic	Weight age
Block 1: Understanding of Livelihood	Unit 1: Concept of Livelihoods	1	Basic concepts of livelihood and Development, Types of development-Immanent/inherent and interventionist/ intentional; Why promote livelihood;	6
		2	Livelihood intervention: definition, types-Spatial, segmental, sector –sub-sector; Systemic view of Livelihoods	6
		3	Understanding Rural Livelihoods-Farm, Non-Farm, and off farm; Linkages with Farm and Off-farm Livelihoods; Economic Models	6
	Unit 2: Livelihood Challenges	4	Livelihood Challenge- Political economy of Livelihoods, Issues of access to farm and non-farm livelihoods;	6
		5	Livelihoods from a Gender Perspective-Feminization of agriculture/ poverty, women in the unorganized sector, the issue of unpaid and informal work;	6
		6	Livelihood Coping Mechanisms	6
		7	Climate Change and Livelihoods; Livelihoods and Disasters	6
Block 2: Livelihood Analysis	Unit 1: Livelihood Frameworks	8	Sustainable Livelihoods Approaches (SLAs)-Definition and origins of SLA; Assets or capitals and capabilities in SLA and its linkage to the other capitals: Physical, Social, Economic, Human, Natural;	6
		9	Vulnerability Assessment- Shocks, trends, seasonality; Policies, institutional context and processes;	6
		10-11	Conceptual Frameworks- DFID, CARE, UNDP, OXFAM, BASIX livelihood triad, Nine square Mandala or Rural Livelihood System's Framework, etc.;	10
		12	Past, Present and possibilities for the future of the SLA, critiques of the approach	6
	Unit 2: Designing Livelihood Intervention and Promotion	13	Designing a suitable livelihood intervention-Observing and Understanding the Local Economy; Selecting livelihood activities suitable for the poor in the area; Deciding on the interventions.	5
		14-15	Livelihood promotion approaches-Poverty and livelihood: Approaches and programs in India; Livelihood and a Rights Based Approach-MGNREGA and its critique; Livelihood and a Social Capital based approach: NRLM	10
Block 3: Livelihood Augmentation (LA)	Unit 1: Pathways for LA	16	Basic concepts; Pathways: a) Entrepreneurial strategies for LA;	5
		17	b) NRM based intervention; c) Market based interventions including Value-chain analysis; d) ICT based interventions;	5
		18	e) Livelihood and allied agriculture (dairy, poultry, Goatery, etc.) based livelihood; f) Forest based Livelihoods vis a vis Livelihood Protection and Promotion: Contribution of NTFP in supporting rural livelihoods	5
			Total	**100**

Note: Block 'A' and 'B' is theoretical; Block 'C' should be covered in the form practical's supported by few classroom discussion through cases

Practical
- Village stays to understand the livelihood pattern of villagers and how the other socio-economic factors affect the livelihood of people
- Visit to institutes/ universities adopted and/or nearby villages to experience the life and natural resources in rural communities-understanding of village culture, evolution, social structure, livelihood pattern, trends, governance arrangements, and the natural context (landscape layout, land use, vegetation types etc)
- Application of participatory rural appraisal skills for understanding village context; Engagement of working with rural communities and their grass-root institutions, understanding dynamics of working in a group
- Visit to different agri-business models as mentioned in the Block 'C'. Group assignments may be given to document the field experience in the form of case study of an enterprise/ entrepreneur/ members and other related stakeholders

Suggested Readings

Teaching Schedule and Lesson Plan
Ph.D. level
Credits: 3(2+1)
Course Code: EXT-607
Title: FACILITATION FOR PEOPLE CENTRIC DEVELOPMENT

WHY THIS COURSE?
The prime aim of the agricultural extension professionals is to influence development change among the stakeholders with whom they work. In the Agricultural Innovation Systems (AIS) context, this change will happen when good relationships, networks and partnerships are formed. A new extension approach that aims at participatory and group learning as well as networking, where the extensionist acts as a facilitator is needed. It is important to inculcate the good facilitation skills by the extension professional to increase the effectiveness and impact among the agricultural extension and advisory services stakeholders.

AIM OF THIS COURSE
  ➢ To orient students on the importance facilitation
  ➢ To inspires students to understand facilitation tools to influence change at the individual, group and organisational levels
  ➢ To develop capacities in multi-stakeholder engagement, facilitation and networking The course is organized as follows:

LEARNING OUTCOMES

After successful completion of this course, the students are expected to be able to:
  ➢ Appreciate the importance of facilitation skills and tools
  ➢ Understand facilitation and networking techniques
  ➢ Critically evaluate strategic partnerships and linkages
  ➢ How to manage group dynamics and engage multi-stakeholders and virtual platforms

Block No.	Lecture No	Topic		Weightage
BLOCK 1: INTRODUCTION TO FACILITATION FOR DEVELOPMENT	**Unit 1: Facilitation for development in the AIS**			06
	1	Facilitation for development in the AIS; Understanding facilitation for development.	2	
	2	Importance of facilitation as a core function of extension within the Agricultural Innovation Systems (AIS)	4	

	Unit 2: Principles, Attributes and Skills for Facilitation for Development			14
	3	Basic principles of facilitation for development	3	
	4	Desired attributes of facilitator for development- Cognitive attributes, Emotional attributes (Emotional intelligence), Social, behavioural and attitudinal attributes	4	
	5	Technical skills of a facilitator for development- Design processes.	2	
	6	Facilitation techniques and tools	3	
	7.	The art of questioning and probing, Process observation and documentation, Visualisation	2	
BLOCK 2: FACILITATING CHANGE IN INDIVIDUALS, GROUPS AND ORGANISATIONS	**Unit 1: Realise Potential- Self-Discovery**			06
	8	Self-discovery to realise our potentials, Tools for self-discovery	2	
	9-10	Formulating a personal vision, Taking responsibility for your own development	4	
	Unit 2: Group Dynamics and Working Together			10
	11	Understanding the dynamics of human interaction.	2	
	12	Group dynamics and power relations	3	
	13	Managing relationships, Shared vision and collective action	3	
	14	Tools for team building	2	
	Unit 3: Organizational Change Process			10
	15	Organizational change process, Organizational learning to adapt to changing environments.	4	
	16	Enhancing performance of organizations	2	
	17	Leadership development	2	
	18	Tools for organizational change	2	
BLOCK 3: FACILITATING OPERATIONAL LEVEL MULTI-STAKEHOLDER ENGAGEMENTS	**Unit 1: Multi-Stakeholder Interactions**			07
	19	Defining stakeholders, Development of collective and shared goals.	3	
	20	Building trust and accountability	2	
	21	Tools for stakeholder identification and visioning	2	
	Unit 2: Innovation and Policy engagement Platforms			07
	22	Visualising innovation platforms	2	

		(IPs), Why are IPs important.		
	23	Different models of IPs for multi-stakeholder engagement, policy engagement platforms	3	
	24	Generating issues and evidence for policy action, Advocacy for responsive policy processes	2	
BLOCK 4: BROKERING STRATEGIC PARTNERSHIPS, NETWORKING AND FACILITATION	**Unit 1: Linkages, Partnerships, Alliances and Networking**			12
	25	Brokering linkages and strategic partnerships, Identification of critical links, Knowledge brokering.	3	
	26	Creating linkages with markets.	2	
	27	Learning alliances and networking.	2	
	28	Coordination of pluralistic service provision within the AIS.	2	
	29	The concept of action learning and reflective practitioners, Networking.	3	
	Unit 2: Facilitating Capacity Development			08
	30	Facilitating Capacity Development-Facilitate participation and learning in development programs and projects.	4	
	31-32	Virtual platforms-skills for strengthening dialogue, collaboration, shared commitment amongst diverse actors and stakeholders.	4	
			Total	**80**

PRACTICALS

1. Practicing facilitation techniques,
2. Self discovery exercises,
3. Working together and interaction (task based),
4. Arrangement for multi-stakeholder interactions,
5. Understanding organisational change process tools and techniques,
6. Case analysis on organisational change process,
7. Participating with innovation platforms,
8. Policy engagement platforms,
9. Stakeholder analysis mapping,
10. Exercise on networking skills,
11. Facilitating capacity building programmes
12. Facilitating virtual platforms
13. Filed visit to multi-stakeholder partnership projects

RESOURCES

AccountAbility.2005. AA 1000, Stakeholder Engagement Standard Exposure draft. http://www.empresa.org/doc/AA1000_STHEngagement.pdf

Anonymous. . Seeds for Change. Facilitation Tools for Meetings and Workshops. Available https://seedsforchange.org.uk/tools.pdf

Clarke S, Blackman R and Carter I. 2004. Facilitation skills workbook -Training material for people facilitating small group discussions and activities using PILLARS Guides.
Tearfund, England.
https://www.tearfund.org/~/media/files/tilz/fac_skills_english/facilitation__e.pdf

Davis S. 2014. Using the Socratic Method as a Learning Facilitatorhttps://facilitatoru.com/training/using-the-socratic-method-as-a-learningfacilitator/

Hanson L. and Hanson C. 2001. Transforming participatory facilitation: Reflections from practice. http://pubs.iied.org/pdfs/G01950.pdf

Jost C, Alvarez S and Schuetz T. 2014.CCAFS Theory of Change Facilitation Guide. CGIAR Research Program on Climate Change, Agriculture and Food Security. https://cgspace.cgiar.org/bitstream/handle/10568/41674/CCAFS%20TOC%20facilitation%2 0 2014%20FINAL.pdf

Kennon N., Howden P. and Hartley M. 2002 .Who really matters? A stakeholder analysis tool. Extension Farming Systems Journal : 5 (2). https://www.csu.edu.au/__data/assets/pdf_file/0018/109602/EFS_Journal_vol_5_no_2_02_K ennon_et_al.pdf

Koutsouris A. 2012. Exploring the emerging facilitation and brokerage roles for agricultural extension education.AUA Working Paper Series No. 2012-4.Agricultural University of Athens.Department of Agricultural Economics & Rural

Development.http://aoatools.aua.gr/RePEc/aua/wpaper/files/2012-4_koutsouris.pdf

Krick T, Forstater M, Monaghan P,Sillanpaa M. 2005. The Stakeholder Engagement Manual: Volume 2, the Practitioner's Handbook on Stakeholder Engagement. Accountability, United Nations Environment Programme, Stakeholder Research Associates Canada Inc.

Linden J. 2015. Innovation in Layer Housing: From Drawing Board to Reality. http://www.thepoultrysite.com/articles/3494/innovation-in-layer-housing-from-drawingboard-to-reality/

Lindy norris. How to Develop Your Personal Vision Statement: A Step-by-Step Guide to Charting Your Future with Purpose and Passion http://static1.squarespace.com/static/5765deb1be659449f97fcbf5/t/5770b309579fb313164a7a 37/1467003657818/LINDYNORRIS.COM++How+to+Develop+a+Personal+Vision+Statement. pdf

Lundy, M, Gottret, M.V. and Ashby, J. 2005.Learning alliances: An approach for building multi- stakeholder innovation systems. http://documents.worldbank.org/curated/en/564521467995077219/pdf/103509-BRIPUBLIC-ADD-series-ILAC-brief.pdf

Makini FW, Kamau GM, Makelo MN, Adekunle W, Mburathi GK, Misiko M, Pali M, and Dixon J.2015. Operational Field Guide for Developing and Managing Local Agricultural Innovation Platforms.Australian Centre for International Agricultural Researchhttps://www.aciar.gov.au/file/103711/download?token=EPYmwxnE

Mind Tools. 2005. The Role of a Facilitator-Guiding an Event through to a Successful Conclusion. https://www.mindtools.com/pages/article/RoleofAFacilitator.htm

Mittal N, Sulaiman RV and Prasad RM. 2016.Assessing Capacity Needs of Extension and Advisory Services A Guide for Facilitators. Agricultural Extension in South Asia. http://www.aesanetwork.org/assessing-capacity-needs-of-extension-and-advisory-services-aguide-for-facilitators/

Mulema, A.A. 2012. Organisation of innovation platforms for Agricultural Research and Development in the Great Lakes Region of Africa.Graduate Theses and Dissertations. Paper 12631.https://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=3638&context=etd

Nederlof S, Wongtschowski M and Van der Lee (eds.) 2011.Putting Heads Together-Agricultural Innovation Platform in Practice.KIT Publishers.

NgwenyaH, and Kibwika P, 2016. NELK Module 7 Introduction to Facilitation for Development, New Extensionist Learning Kit (NELK), Global Forum for Rural Advisory Services (GFRAS) http://www.g-fras.org/en/knowledge/new-extensionistlearning-kit-nelk.html#module-7-introduction-for-facilitation-for-development

Otim RL. 2013. Facilitation Skills Training Manual: A facilitator's handbook. United States Agency for International Development (USAID). https://publiclab.org/system/images/photos/000/020/662/original/FACILITATION_SKILLS_ TRAINING_Manual.pdf

Partridge, K., Charles, J., Wheeler, D., Zohar, A., 2005.The Stakeholder Engagement Manual: Volume 1. The Guide to Practitioners' Perspectives on Stakeholder Engagement. Stakeholder Research Associates Canada Inc., 355 Division Street Cobourg Ontario Canada K9A 3R5.

Pye-Smith, C. 2012.Agricultural extension: A Time for Change. Linking knowledge to policy and action for food and livelihoods. https://cgspace.cgiar.org/handle/10568/75389

Steinlin M, Jenkins CW. Knowledge Sharing for Change- Designing and Facilitating Learning Process with a Transformational Impact. Ingenious Peoples Knowledge. http://www.fsnnetwork.org/sites/default/files/ipk_trainingmanual_midres.pdf

Tallia, A.F., Holly J. Lanham, H.J., McDaniel, R.R. Jr., and Benjamin F. Crabtree, B.F. 2013. 7 Characteristics of Successful Work Relationships.https://www.aafp.org/fpm/2006/0100/p47.pdf

Van Rooyen A., Swaans, K., Cullen, B., Lema, Z. and Mundy, P. 2013. Facilitating Innovation Platforms in: Innovations platforms practice brief 10. https://assets.publishing.service.gov.uk/media/57a08a28ed915d3cfd000602/Brief10.pdf

Villet, V V. 2015. Motivation Theory by David McClelland. https://www.mindtools.com/pages/article/human-motivation-theory.htm

WEBSITES

MSU –Michigan State University Extension Facilitation https://www.canr.msu.edu/facilitation/

TAPipedia- Tropical Agriculture Platform https://www.tapipedia.org/

CGSpace- A Repository of Agricultural Research Outputs by CGIAR https://cgspace.cgiar.org/handle/10568/33667

UMaine - The University of Maine https://extension.umaine.edu/community/strengtheningyour-facilitation-skills/

GFRAS- Global Forum for Rural Advisory Services http://www.g-fras.org/en/SUPPORTING COURSES

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