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Empowering young farmers for sustainable agriculture

Dr. Nasreen Banu and Dr. K Yashoda

Abstract
Present study was taken up to address the Farmer problems in the adopted villages of Moinabad mandal, RR district, Hyderabad. 70 young Farmers formed the sample for the present study. Checklists developed by the unit (AICRP-Child Development) were used to find out the problems & training needs of the Farmers. Based on the training needs, on campus & off campus training programmes were organized involving experts. Besides this Life skill index was also developed to trace the life skills for Sustainable Agricultural practices. Success stories were documented and based on the field experience a Conceptual model was developed for Retaining youth in Agriculture.

Keywords: sustainable agriculture; retaining youth in agriculture

Introduction

Research facts

- India is losing more than 2,000 farmers every single day and since 1991, the overall number of farmers has dropped by 15 million (Sainath, 2013) [6]. This has several implications for the future of Indian agriculture and India's food security.
- Attracting and Retaining Youth in Agriculture (ARYA) is critical for Indian Agriculture as most of the new innovations require a skilled Agricultural work force. For instance, promotion of high value agriculture, precision farming, organic cultivation, Hi-Tech horticulture, micro-propagation, Integrated Pest Disease & Nutrients Management, Post-Harvest Management, development of backward and forward linkages etc. require well trained young farmers with enthusiasm and passion for farming and ability to take risks.
- The rural youth could be the ideal target for skill training in these new areas of agricultural growth and to do this effectively there is a need to mobilize young farmers.

Hence the project has been taken up, because a well-trained, well informed & educated Youth will be in a better position to assess the changing conditions, can also be change agents for Sustainable Agricultural practices and models for other farmers to follow.

Note: The present study was supported by ICAR under XII plan period

Introduction & Background

- Nearly three-quarters of India's families depend on rural income.
- Majority of India's poor (some 770 million people or about 70 percent) are found in rural areas. India's food security depends on producing cereal crops, as well as increasing its production of fruits, vegetables and milk to meet the demands of a growing population with rising incomes.
- To do so, a productive, competitive, diversified and sustainable agricultural sector will need to emerge at an accelerated pace.

Operational definition

Youth: The current generation of youth, defined by the United Nations as those aged between 15 to 24 years, is the largest in history. As of 2012, the youth make up for 1.8 billion or 18% of total world population. Ninety percent (90%) of these young people live in developing countries, comprising as much as 20% of their countries' total population.

Life skills have been defined by WHO (1993) as "the abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life". 'Adaptive' means that a person is flexible in approach and is able to adjust in different circumstances. 'Positive behaviour' implies that a person is forward looking even in difficult situations.

Life skillsIndex: It is the basic skills required for sustainable agricultural practices as ranked by the experts (from Agriculture, Horticulture, extension, govt dept & NGOs working for farming community). It includes3 major skills: Cognitive skills, Management skills and Interpersonal skills. Cognitive skill were given rank I, followed by Management skills (Rank II) and Interpersonal skills (III), by the experts (36).

Cognitive skills include: Critical thinking, Creative thinking, Decision making and Problem solving

Inter personal relationship skills include: Communication skills, Empathy Coping & Management skills refers to the ability to recognize, understand and manage one's own emotions as well as others; ability recognize the source of stress and manage it in a constructive way and aability to manage resources and cope with difficult situations.

Research methodology

Sample was identified from the adopted villages (5) of Moinabad mandal, RR District, Hyderabad (AP), through field survey and focused group interviews with the Youth leaders, Adarsharytu, Book keeper, Ration card dealer, karobar, Village Sarpanch & other active farmers in the village. There were 1255 youth in the age group of 16-25yrs in the selected villages (5) of Moinabad mandal, RR District.

General objective: Empowering Young Farmers for Sustainable agriculture

Specific objectives

- To find out the attitude of youth towards Agriculture
- To find out the reasons/problems faced by the farmers
- To find out their training needs with regard to sustainable agriculture
- To conduct on campus and off campus capacity building programmes
- To generate success stories to be a model for other young farmers to follow
- To develop life skills Index for Sustainable agricultural practices
- To develop a Conceptual model for retaining youth in Agriculture
- To develop & disseminate IEC material to empower young farmers towards sustainable agricultural practices

Research strategy adopted: In order to achieve the above objectives Capacity building programmes were organized for the farmers involving stakeholders; experts; successful agriculturists; entrepreneurs & NGOs. Besides this the project also focused on developing Life skills Index required for sustainable agricultural practices.

Research tool details

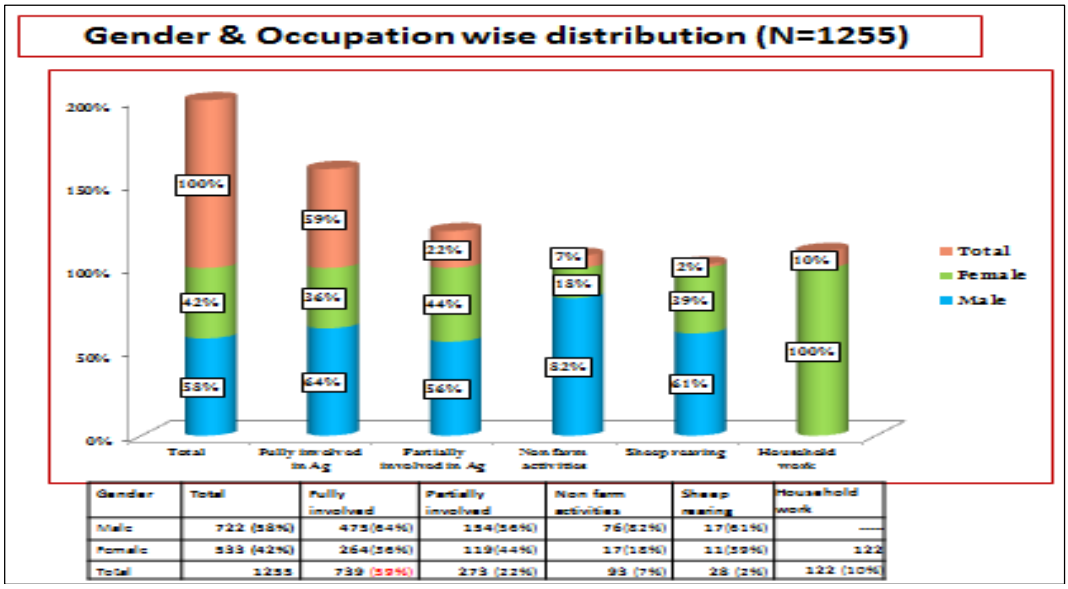
1. SES scale developed by Aggrawal, *et al* (2005) was used to find out the SES of the rural families. Scoring was given as per the norms provided in the manual.
2. Life Skill Index developed by AICRP-CD unit, Hyderabad, was used to find out the Life skills levels of the selected sample.
3. Open ended checklist developed by AICRP-CD, Hyd unit, to find out the Perceptions of young farmers towards Agriculture
4. Open ended checklist developed by AICRP-CD, Hyd unit, was to find out the Training needs of the youth in Agriculture

Characterization of youth involved in Agriculture

Out of 1255 sample, 1012 (81%) were engaged in Agriculture. Out of 1012, 739 (59%) were fully engaged in Agriculture work and 273 (22%) were partially engaged in Agriculture work. Out of 1255 sample, 70 were selected for research purpose. Youth who were willing to be a part of the project formed the sample.

Out of 1255 sample

- 728 (58%) were boys & 527 (42%) were girls.
- 467 (37%) were in the age group of 16-19 yrs; 400 (32%) were in the age group of 19-22 yrs; and 388 (31%) were in the age group of 22-25 yrs;
- 462 (37%) completed SSC; and 208 (16%) discontinued studies after 10th class
- 264 (21%) passed Inter and 200 (16%) failed Inter/discontinued
- 121 (10%) studying degree college
- 1012 (81%) were engaged in Agriculture
- 28 (2%) were engaged in Sheep rearing
- 93 (7%) were involved in non-farm activities
- 122 (10%) were engaged in domestic work.



Gender	Total	Fully involved	Partially involved	Non farm activities	Sheep rearing	Household work
Male	722 (58%)	475(64%)	154(56%)	76(82%)	17(61%)	—
Female	533 (42%)	264(36%)	119(44%)	17(18%)	11(39%)	122
Total	1255	739 (59%)	273 (22%)	93 (7%)	28 (2%)	122 (10%)

The Socio-Economic Statuswas found based on the method prescribed by Aggrawal, *et al*. (2005). Out of 70 rural families, 43% (30) belonged to lower middle class families, 26% (18) were poor, 17% (12) belonged to upper middle class and14% (10) were very poor.

Income particulars of the youth: Out of 70 families selected for the study, 46% (32) of the youth had income of Rs.3403/- per month; 24% (17) of the youth had income of Rs.1597/- per month; 19% (13) of the youth had income of Rs.645/- per month; and 11% (8) of the youth had average of Rs.6772/- per month.

Perceptions of young farmers (N=70) towards Agriculture: Youth in rural areas do not find Agriculture beneficial. Some of the reasons attributed were: Poor returns to investment (55%); Not perceived as a viable business (58%) &Not an attractive career path (50%); No ready market (55%) &It is energy-sapping (55%); Farmers are not respected (50%); Inadequate credit facility (43%) and Insufficient land: (38%).

Training needs of farmers

Training plays an important role in the advancement of human performance in a given situation. Training provides a systematic improvement of knowledge and skills which in turn helps the trainees to function effectively and efficiently in their given task on completion of the training. Training is a process of acquisition of new skills, attitude and knowledge in the context of preparing for entry into a vocation or improving ones productivity in an organization or enterprise.

Effective training requires a clear picture of how the trainees will need to use information after training in place of local practices what they have adopted before in their situation. Lynton and Pareek (1990) [5] stated that training consists largely of well-organized opportunities for participants to acquire necessary understanding and skill. Farmer training is directed towards improving their job efficiency in farming.

Table 1: Training needs of the farmers (youth) (N=70)

S. No	Training area	Specific area	%	Ranking
1	Crop Production & Plant Protection	1. Weed management	55%	2
		2. Cropping systems	53%	3
		3. Crop diversification	41%	5
		4. Integrated farming	49%	4
		5. Integrated pests and disease management	60%	1
2	Soil Health & Fertility Management	1. Soil fertility management	60%	2
		2. Soil and water conservation	62%	1
		3. Management of problematic soils	47%	3
3	Vegetable Crops	1. Production of low volume and high value crops	50%	3
		2. Off-season vegetables	56%	1
		3. Protective cultivation	47%	4
		4. Post-harvest technology	54%	2
4	Fruits	1. Cultivation of Export potential fruits	40%	2
		2. Commercial fruit production	47%	1
5	Farm based vocations	1. Seed production	40%	3
		2. Bio-fertilizer &Bio-pesticides	26%	4
		3.Vermi-compost production	47%	2
		4. Organic manures production	50%	1

The above table presents the Training needs of the farmers (youth) from the adopted village of Moinabad mandal. The list includes different areas: Crop Production & Plant Protection; Soil Health & Fertility Management; Vegetable Crops; Fruits; Farm based vocations and Non-Farm based vocations

Crop Production & Plant Protection: In this area, in the order of ranking, youth (who were involved in Agriculture) showed first preference for integrated pests and disease management. Training on integrated pest and disease management of the crops was the most important (60%) need in plant protection followed by control of pest and disease by use of biological agents. This could be attributed to the fact that farmers may be over using fertilizers and pesticides/fungicides.

The 2nd preference (55%) was given for Weed management. Weeds are often recognized as the principal biotic constraint to organic crop production. Development of suitable weed control measures through integrated weed management practices is, therefore, a prerequisite for profitable farming.The3rd preference (53%) was given for cropping systems; 4th preference (49%) was given for integrated farming and 5th preference (41%) was given for Crop diversification.

Soil Health & Fertility Management: In this area, in the order of ranking, youth (who were involved in Agriculture) showed first preference (62%) for Soil and water conservation; 2nd preference (60%) for Soil fertility management and 3rd preference (47%) for Management of problematic soils.

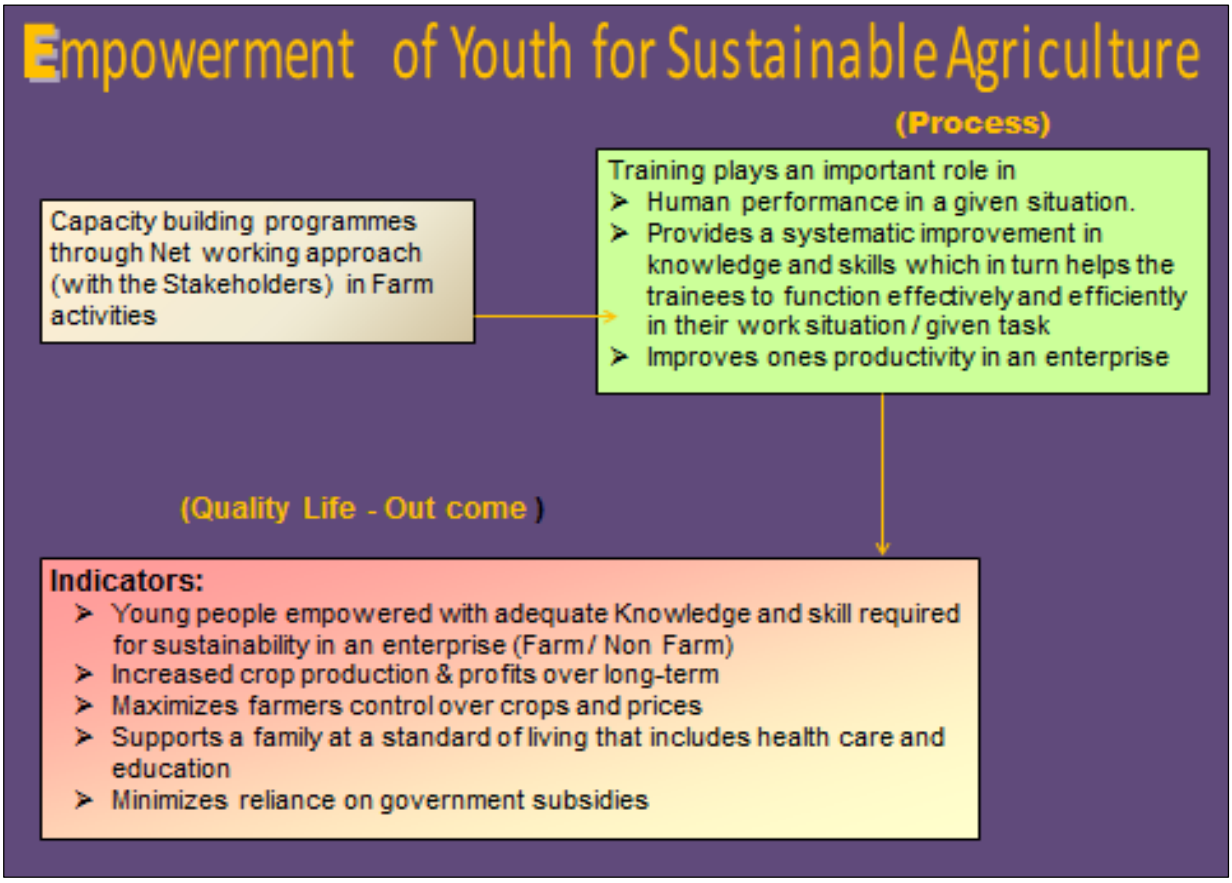
Vegetable Crops: In this area, in the order of ranking, youth (who were involved in Agriculture) showed first preference (56%) for Off-season vegetables; 2nd preference (54%) for Post-harvest technology; 3rd preference (54%) for Production of low volume and high value crops and 4th preference (47%) for Protective cultivation (green houses, shade net).

Fruits: In this area, in the order of ranking, youth (who were involved in Agriculture) showed first preference (47%) for Commercial fruit production and 2nd preference (40%) for Cultivation of Export potential fruits.

Farm based vocations: In this area, in the order of ranking, youth (who were involved in Agriculture) showed first preference (50%) for Organic manures production; 2nd preference (47%) for Vermi-compost production; 3rd preference (40%) for Seed production and 4th preference (26%) for Bio-fertilizer &Bio-pesticides.

Based on the awareness levels & Training needs of the youth, capacity building programmes (17) were organized for youth for Sustainable livelihoods in Agriculture using Networking approach.

Capacity building programmes



Networking approach for retaining youth in Agriculture:
Networking approach is about

- Gaining information about Agriculture
- Narrowing down our choices for creating sustainable livelihoods for Farmers
- Connecting with stakeholders who can assist and support the Farmers
- Building interface between the Farmers & the Stakeholders

- Building required knowledge & skill among Farmers through supportive programmes

Methodology followed for Net-working approach

- First found the specific training needs of the Farmers
- Traced and short listed Stakeholders who were willing to assist & support in creating sustainable livelihoods for farmers
- Conducted awareness programmes to appraise the rural youth about the kind of services being offered by the Stakeholders for Sustainable Livelihoods
- Created common plate form (through stakeholder meet) for the farmers to discuss issues with the Stakeholders regarding sustainable agriculture practices
- Conducted village level meetings with village officials & famers for generating action plans

Strategies adopted for achieving the above set procedure:

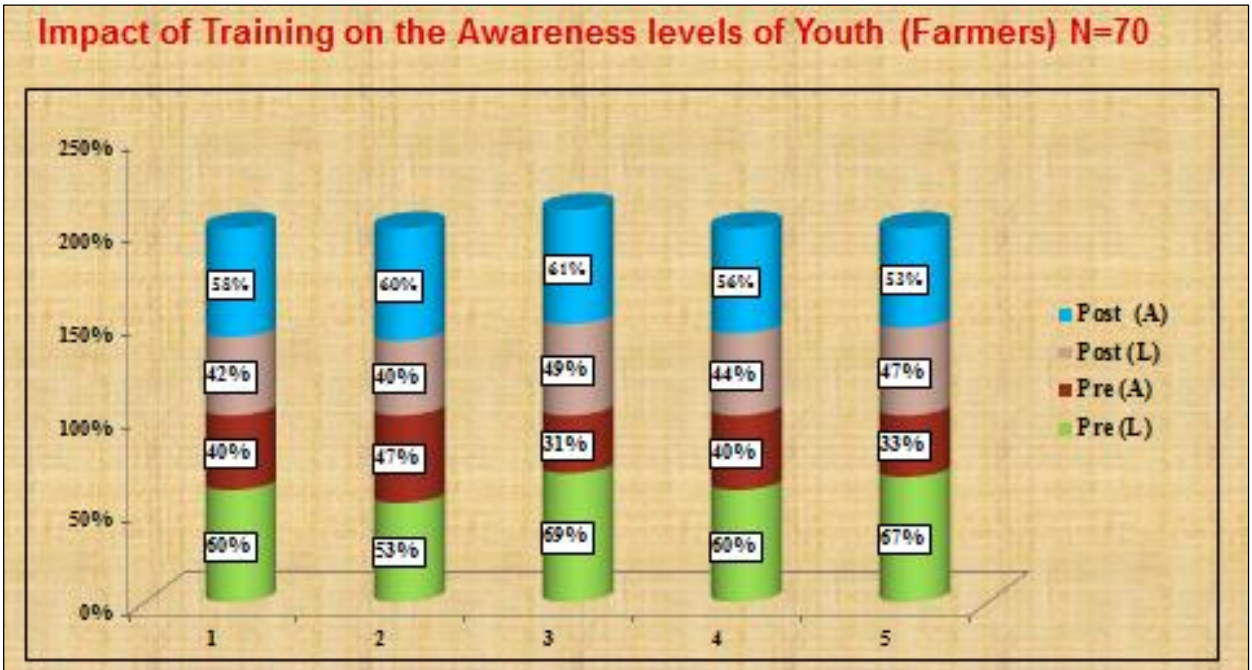
- Awareness programmes on Govt subsidies, Farm implements & 14 TV channels relating to Agriculture;
- Problem specific Field level & on campus Training programmes; Frontline demonstrations; Exposure visits; Interaction with successful farmers;
- Consultations/Interactive sessions with the Stakeholders;
- Video clipping on successful case studies on sustainable Agricultural practices

Networking with the stakeholders for sustainable livelihoods in agriculture

Youth involved in Agriculture - Sustainable Livelihoods in Agriculture

Clientele: Youth in the age group of 17 - 25 yrs

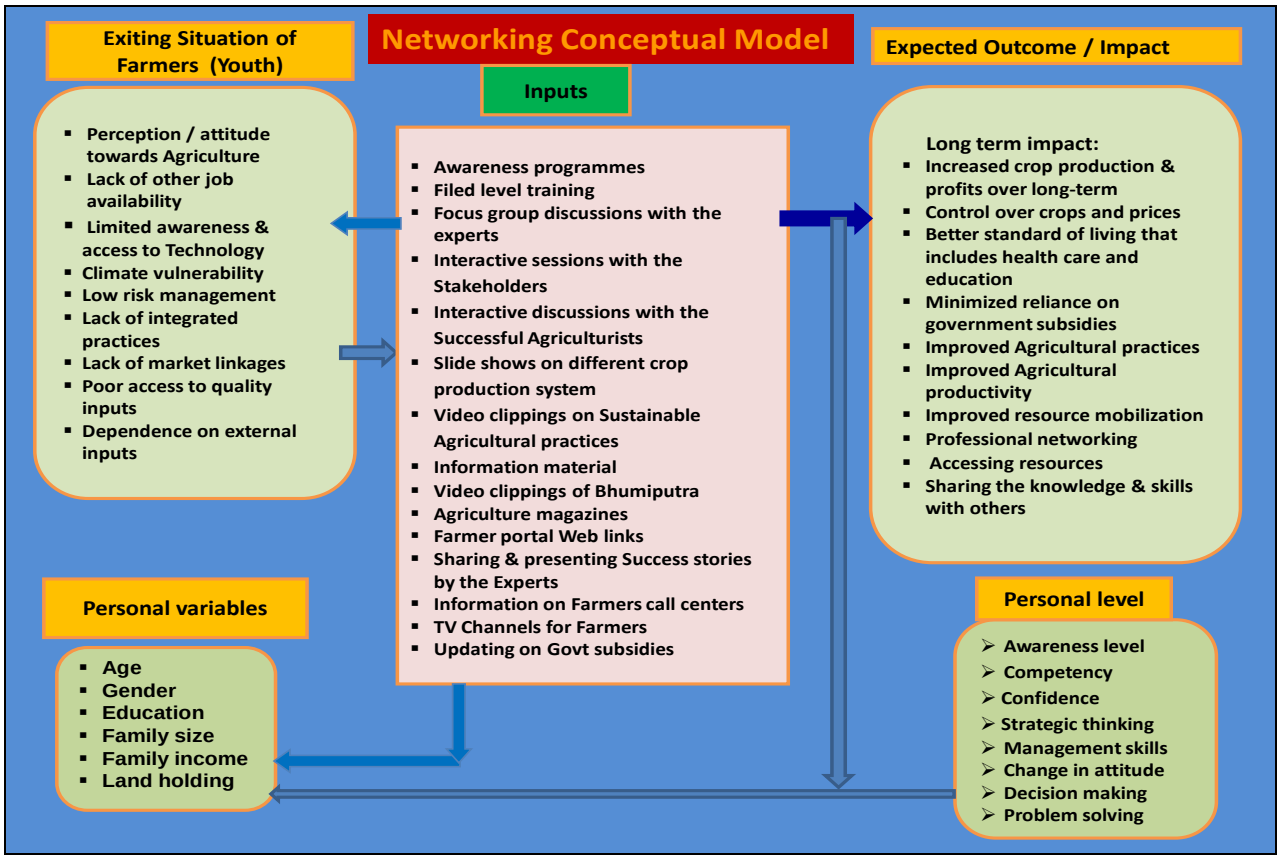
s.no	Title	Line dept stakeholders	Outcome of the programme
1	➢ Crop Production Technologies	▪ Horticulture Department ▪ Agriculture Department ▪ Mandal level officials ▪ Farmers Training centre ▪ Centre for sustainable agriculture ▪ Sampada farms &Consultancy ▪ Center for Agriculture Development & Entrepreneurship ▪ AICRP-CD	➢ Young people empowered with adequate Knowledge and skill required for sustainability in Farm based enterprise ➢ Increased crop production & profits over long-term ➢ Maximizes farmers control over crops and prices ➢ Supports a family at a standard of living that includes health care and education ➢ Minimizes reliance on government subsidies ➢ Empowered youth who can respond to the real life situations in positive and responsible ways ➢ Youth equipped with coping skills, personal and social competencies will be able to manage challenging situations and utilize existing opportunities optimally
2	➢ Cropping systems		
3	➢ Crop diversification		
4	➢ Integrated farming		
5	➢ Plant Protection Measures		
6	➢ Post Harvest Technology		
7	➢ Fruit and Vegetable Preservation		
8	➢ Integrated pests and disease management		
9	➢ Soil fertility management		
10	➢ Soil and water conservation		
11	➢ Weed management		
12	➢ Procuring quality seeds		
13	➢ Higher productivity & agricultural sustainability on the farm		
14	➢ Appropriate technologies for marginal farmers		
15	➢ Production of low volume and high value crops		
16	➢ Off-season vegetables		
17	➢ Commercial fruit production		
18	➢ Vermi-compost production		
19	➢ Protective cultivation (green houses, shade net)		
20	➢ Farm based enterprises		
21	➢ Life skills for sustainability		



Area	Pre (L)	Pre (A)	Post (L)	Post (A)
1. Weed Management	42 (60%)	28 (40%)	29 (42%)	41 (58%)
2. Cropping systems	37 (53%)	33 (47%)	28 (40%)	42 (60%)
3. Integrated pest and Disease management	48 (69%)	22 (31%)	34 (49%)	36 (51%)
4. Soil fertility management	42 (60%)	28 (40%)	31 (44%)	39 (56%)
5. Soil and water conservation	47 (67%)	23 (33%)	33 (47%)	37 (53%)

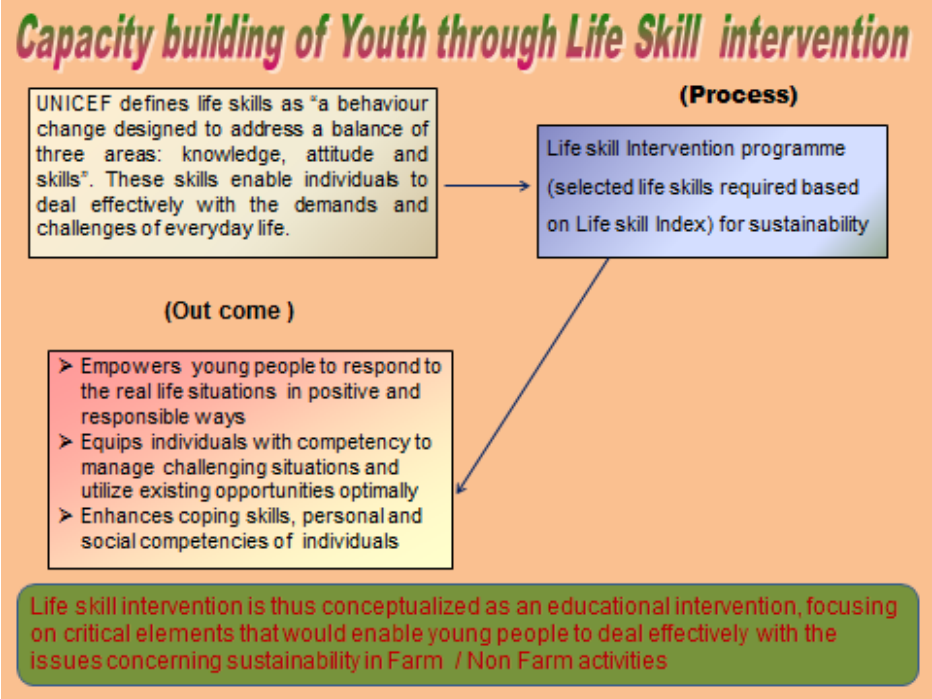
Based on the pretest scores, on campus and off campus (knowledge & skill based) training progrmames (17) were organized for the youth. Significant improvement was observed in the post test scores.

Based on the results following Conceptual model was developed on networking approach for retaining youth in Agriculture



Life skill index: Prioritizing life skills needed for youth involved in farm activities for sustainability

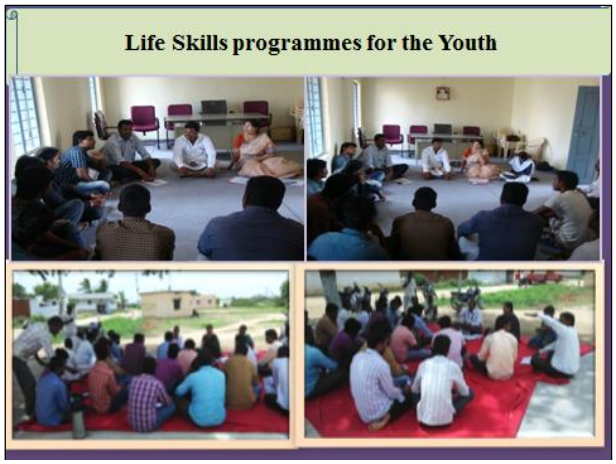
Life skill	Ranking given by experts for				No of experts
	4	3	2	1	
Cognitive/Thinking Skills	6	20	10	--	36
Interpersonal Skills	---	1	18	17	36
Management Skills		1	19	16	36



Impact of life skill training on farmers (Youth) N=70

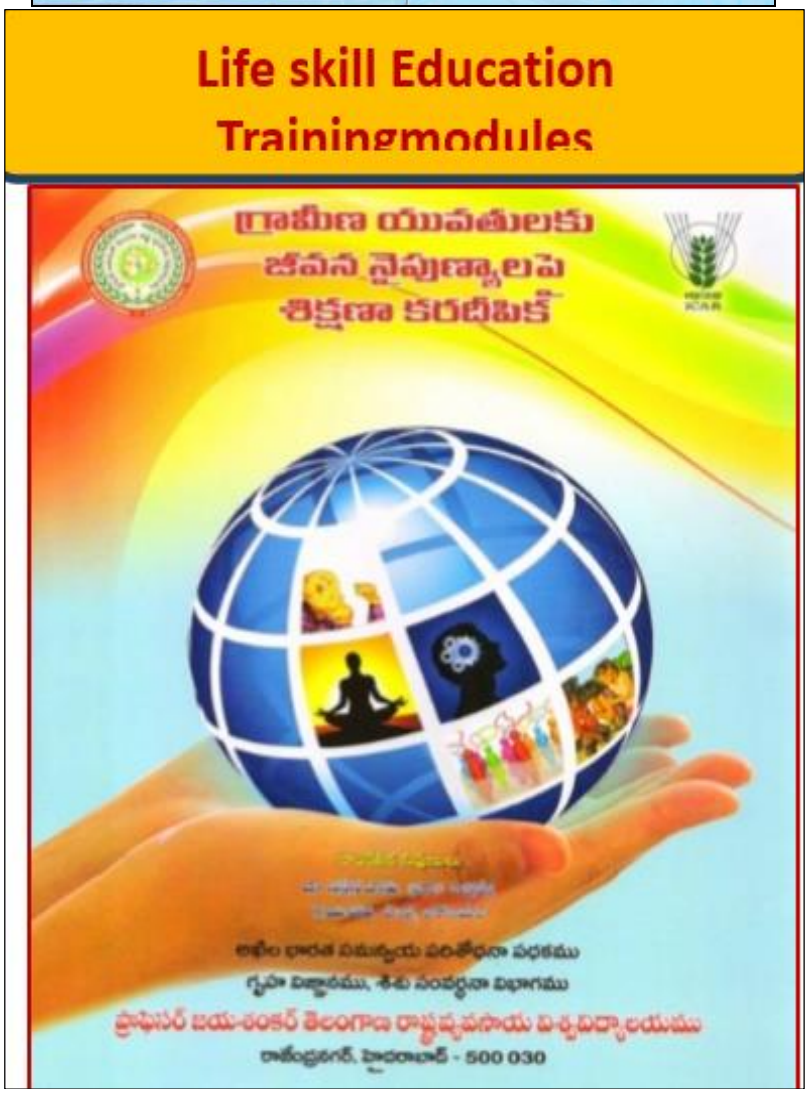
Skills	Weightage given by Experts	Categories	Pre scores	Post scores
			No & %	No & %
1. Cognitive skills	I	Low	53 (77%)	33 (47%)
		Average	17 (23%)	25 (36%)
		High	---	12 (17%)
II. Inter personal relationship skills	III	Low	24 (34%)	20 (29%)
		Average	28 (40%)	28 (40%)
		High	18 (26%)	22 (31%)
III. Management skills	II	Low	29 (41%)	21 (30%)
		Average	30 (43%)	27 (39%)
		High	11 (16%)	22 (31%)

Based on the pretest scores, Life skill education programmes (10) were organized for the youth. Life skills were demonstrated through group exercises, role plays, open ended stories, Brain storming, Group activities, Games & simulations, Situation analysis, Case studies, responding to real life situations and Group discussions etc. Significant improvement was observed in the post test scores.



Following package of material was developed in support of the framed objectives

- Life skill educational Training modules (10) in regional language
- Success stories were documented from the study and
- DVDs were developed for Empowering young farmers with relevant information & skill for Sustainable Agricultural practices & livelihoods



Based on Research results following Recommendations were framed

- Agriculture students need to be involved in motivating young farmers in rural areas to adopt integrated & innovative farming practices for sustainable livelihoods
- Concerned stakeholders need to develop skill based e modules (in regional language) for empowering youth with adequate information & skills
- Farmer friendly portals need to be created & young famers need to be trained in ICT to access information on innovative & alternative farming system in view of climate change
- Capacity Building of youth-There is an urgent need for training and skill-building opportunities for young people that can mould them for active participation in decision-making processes.
- Engage youth actively-Youth must be recognised as major stakeholders and need a platform where their voices will be heard on issues that directly concern them.
- Facilitation-Youth Communication, Advocacy and Networking. There is a need to guide youth in terms of how to communicate their challenges, ideas and experiences.
- Distance or short term skill based learning programmes need to be offered by the SAUs (State Agricultural Universities) for the semi-literate & literate young farmers in rural areas.

Conclusion

- Youth constitute the most important sector in our society and they are one of the greatest assets that any country can have. For the country to be economically stable the agricultural sector must be strong and youth have to be encouraged to participate in agricultural activities.
- However the constraints which youth face needs to be addressed i.e. Youth face many push back factors such as inadequate rural credit facilities, low returns to agricultural investments, lack of modern farming technics and lack of access to farming inputs.
- Youth can be attracted to agriculture if they see meaning, income opportunities as well as feel a sense of pride in farming. Youth need training, effective mentors, coaches, motivators.
- To harness the potential and energy of the youth for agriculture, a comprehensive and integrated policy and program on agrarian reform, rural development, sustainable, agro-ecological production and farmer-managed agro-based enterprises as well as on markets and trade should be put in place, with special incentives and provisions for young farmers.
- The community and the larger public must be sensitized to the importance of the role of agriculture in the economy and in ensuring food security. Respect for farming should be built and more awareness should be created in recognizing the role of farmers in agriculture.

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