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Creating a skilled women agricultural work force for achieving food security: a case of Nalgonda District of Telangana State

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ABSTRACT
The newly formed Telangana state has an emerging women agricultural work force,64.5% with agricultural labor being 48.14% and women cultivators,16.43 %(Census 2011).A skilled agricultural work force will enable farm families to achieve food security through enhancing own production, working as wage labor individually or as contract labor in the form of self-help groups. Empowering the women workforce with better agricultural skills will enable them to increase production and earn more income which will be used on food, health and education of children. There are evidences of gender equality strategies and food security strategies being complimentary to each other. There is a strong link between agricultural production, dietary diversity and health and nutritional well being of children. Under the tribal sub-plan activities of the Indian Institute of Rice Research, Hyderabad, a series of comprehensive skill trainings were organized for tribal farm women (340) of selected tandas in Nalgonda District of Telangana. Rice is a highly labor intensive crop and is currently facing the challenge of water scarcity. Skill training on use of drum seeder for direct seeded rice was organized for tribal farm women to impart them skills in the use of drum seeder which saves water and labor costs. The use of appropriate herbicide their dosage and time of application to reduce drudgery of manual weeding was also demonstrated. In order to develop eco-entrepreneurship among tribal women the skill in setting up a vermi-compost unit were imparted to enable them to earn income from the sale of vermicompost. In the study area three of the most critical activities of transplanting, weeding and harvesting rice cultivation are undertaken on a contract basis by women labor. Therefore, the members of the existing Self-help-groups of tribal women were apprised of the negotiating skills to improve their collective bargaining and earn a steady income from these activities. It is being envisaged that this skilled agricultural workforce will be able to improve their income and achieve food security for their families.
Key Words: *women farmers, agricultural labour, skill training, food security,eco-entrepreneurship*

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INTRODUCTION

In India, a large proportion of workforce is still dependent on the agricultural sector (48.9 per cent employment share in 2011-12). Findings of the National Sample Survey (68th Round) results indicated that in 2011-2012, 24.8 of every 100 women worked in rural areas. The corresponding number when it came to men was 54.3. In India, as per Census 2011, 41.1% of women main and marginal workers are engaged as agricultural labourers, 24.0% are cultivators, 5.7% are household industry workers and 29.2% are engaged in other works. Among all rural female workers employed in Agriculture, 53.1 per cent were youth (NSSO,68 round2011-12). There has been a 24% increase in the number of female agricultural labourers, from 49.5 million in 2001 to 61.6 million in 2011(figure 1.) Telangana the twelfth largest state in India has an area of 114,840 km2. On 2 June 2014, Telangana was separated from Andhra Pradesh as a new 29th state of India, with the city of Hyderabad as its capital. The Economy of Telangana is mainly driven by agriculture. District level estimates of female agricultural workforce may help the development practitioners and policy makers for setting priorities, allocating resources and devise more effective and targeted employment and economic policies. The present study focuses on the change in occupational composition of rural female workers, the Gender disparity in work participation ratio and the prospects and potential of creating a skilled women agricultural work force for achieving food security in the Nalgonda District of Telangana as a part of the Tribal-Sub-plan activities of the ICAR-Indian Institute of Rice Research (IIRR), Hyderabad. The newly formed Telangana state has an emerging women

agricultural work force,64.5% with agricultural labor being 48.14% and women cultivators,16.43 %(Census 2011).A skilled agricultural work force will enable farm families to achieve food security through enhancing own production, working as wage labor individually or as contract labor in the form of self-help groups. Empowering the women workforce with better agricultural skills will enable them to increase production and earn more income which will be used on food, health and education of children. Agriculture Skill Council of India (ASCI) was set up in January 2013 as a Section 25 company under Companies act of Ministry of Company Affairs. The endeavour of ASCI is to work towards building capacity in the Agriculture Industry and bridge the gap between laboratories and farms. ASCI envisions touching / upgrading skills of Cultivators, Agricultural Labours and Direct and Indirect labour engaged in Organised and Unorganized Agriculture and Allied industry. The ICAR-IIRR through its outreach activities is involved in the capacity building of farmers and developement personnel to disseminate improved rice production technolofies.Skill trainings are an integral part of the institutioanl and village-based training programs.

The data

The analysis pertains to the district wise census data for the years 2001 and 2011, from the combined data of unified state of Andhra Pradesh derived from the Census of Andhra Pradesh 2011. District-wise Percentage distribution of sectoral composition of Female Workers in Telangana was worked out for rural female workers excluding the urban female workers assuming that female workers in urban areas have less to negligible agricultural participation. The change in occupational composition of rural female workers was worked out from figures of census 2001 and 2011. The Gender disparity in work participation ratio over the last three census periods was worked out and the disparity index was calculated as follows DI = female / male where in disparity index approaches 1 indicates the least disparity and vice versa. Under the tribal sub-plan activities of the Indian Institute of Rice Research, Hyderabad, a series of comprehensive skill trainings were organized for tribal farm women (340) of selected tandas in Nalgonda District of Telangana. Rice is a highly labor intensive crop and is currently facing the challenge of water scarcity. Skill training on use of drum seeder for direct seeded rice was organized for tribal farm women to impart skills in the use of drum seeder which saves both water and labor costs. The use of appropriate herbicide their dosage and time of application to reduce drudgery of manual weeding was also demonstrated. In order to develop eco-entrepreneurship among tribal women the skill in setting up a vermi-compost unit were imparted to enable them to earn income from the sale of vermicompost.

Findings and Discussion

Data show that when both self-employment as cultivators and wage labour are considered, women provide more employment in agriculture than men in all the districts of Telangana state.

Farmers becoming agricultural labourers

The occupational distribution during 2001 and 2011 indicates that the percentage of cultivators(Table1) has declined in all the ten districts of the Telangana State in consonance with the all India trend which indicates a fall of 8% in cultivators, and an addition of 16.35% to the agricultural labour category.There is movement away from self-cultivation to agriculture labour with the highest change being in Rangareddy district.It can be noted that Rangareddy district has the unique distinction of adding 37.5% women to the other workers category signalling a shift to non-agricultural employment.

More women than men work as agriculture labour

The number of women agricultural labour, is growing even though the agricultural workforce as a whole is shrinking. In India, as per Census 2011, 41.1% of women main and marginal workers are engaged as agricultural labourers, 24.0% are cultivators, 5.7% are household industry workers and 29.2% are engaged in other works There has been a 24% increase in the number of female agricultural labourers, from 49.5 million in 2001 to 61.6 million in 2011(figure1) the corresponding figures for Telangana State as per Census 2011 are 48.2% agricultural labour,16.4% are cultivators,7.8% are household industry workers and 27.6% are engaged in other works.

The scenario of women agricultural workers in Telangana (table1) is similar to that of the all India level, except for the Rangareddy district there is a fall in percentage of women agriculture labour .The probable reason could be the withdrawal of the women workforce from agriculture due to better literacy status as it ranks second in the state for female literacy status. Reddy and Venkatanarayana(2013) reported an increase in the share of casual labour in the total units of labour used in rice cultivation with a corresponding decline in the share of family labour in the state of Andhra Pradesh. Even the small and marginal farmers, for about three-fourth of the labour inputs,had to depend on casual labour. Mallaiah (2007) reported that the agricultural women laborers constitute the most exploited segment of laborers and their levels of employment and wages remain significantly below those of men in the agricultural labor market. Neeta (2014)opined that gender remains the key challengeto female employment issues.

Data shows (Table2) that women provide more employment as agriculture labour than men in all the districts of Telangana State. Of the ten districts, women agricultural labour was more than 50 % in six districts with Khammam having the highest percentage of women agricultural labour. Similarly, Women represent a larger proportion of labourers than men in the agricultural sectors of Asia, sub-Saharan Africa, and the Middle East and North Africa (World Bank 2008).

Gender disparity in work participation ratio

The Gender disparity in work participation ratio over the last three census periods was worked out and it can be inferred that in the district of Hyderabad it was very low in the last two census periods (1991 and 2001) with a slight improvement in the census of 2011 indicating a better work participation ratio of women workers and this may be in the formal organized sector. According to the latest census 2011, there is a fall in the work participation ratio of women in Adilabad district and the probable reasons could be the withdrawal of women from informal agricultural work and better literacy status of women.

Skill training of women farmers

The skill in use of drum seeder for direct sowing of pre-germinated paddy seeds was imparted to tribal farm women along with the use of mechanical weeder, to reduce drudgery in the transplanting and weeding of rice. The tribal farm women had low awareness (3%) about use of drum seeder for direct sowing of rice. The farm women were very happy to acquire the skill in the use of drum seeder and reported that it will reduce their dependence on labor for transplanting and they themselves can plant about two acres of land by using the drum seeder (49%). In order to build entrepreneurship, skill training was provided in the setting up of ten vermi-compost units and these will become functional in a period of three months. Similarly a group of tribal farm women (40) were trained in the production of quality paddy seeds to cater to their own needs and of fellow farmers of the village. A close monitoring of the adoption of acquired skills would be undertaken in the *rabi* season. The impact of the training programs in the adoption of labour saving devices and entrepreneurship development of the beneficiary tribal farm women would be studied.

Skill training and Front Line Demonstrations (FLD) on drudgery reducing technologies were organized in 5 hectares on farmer's fields. The technology package comprised of use of herbicide (penoxsilum) to control weeds and use of manual weeder to reduce drudgery of manual weeding. The use of manual weeders was also demonstrated as a labour saving strategy as there is scarcity of labour and also the cost of labour is high in this area as women labour prefers cotton and vegetable crops to rice.

A pre-kharif group discussion was organized to disseminate information on advantages of adopting pre-emergence herbicide for weed control and saving of labour employed for manual weeding. The correct dosage, method and time of application were demonstrated on the farmer's fields. Skill training on use of manual weeder was organized for farm women. The FLD beneficiary farmers reported that the herbicide was very effective in controlling weeds and only one weeding was carried out with manual weeder distributed to them under FLD inputs. On an average Rs1200/acre was saved on labour costs by using the herbicide and manual weeder. Moreover, the FLD beneficiary women were convinced and happy to use the weeder to reduce their drudgery of manual weeding.

The functioning of female agricultural labour contractors and female labour groups for providing labour in paddy cultivation is a common feature in all the Telangana districts. The group members were providing contractual labour for transplanting, weeding and harvesting and the wages were equally distributed among the members. Thirty assured labour days in rice cultivation with average earnings of Rs.6000/- per member was recorded. Most of these groups work on contractual basis and the employer-farmers prefer them as it ensures timeliness and assured supply of labour for completing the operations. Therefore, institutionalising the collective action of women labour as skilled agricultural labour force by training them in setting up group norms, negotiation skills and new methods of rice cultivation was undertaken as a Farmer-Institute Partnership. The group labour system is thus beneficial to both the farmer and women's group providing skilled labour force.

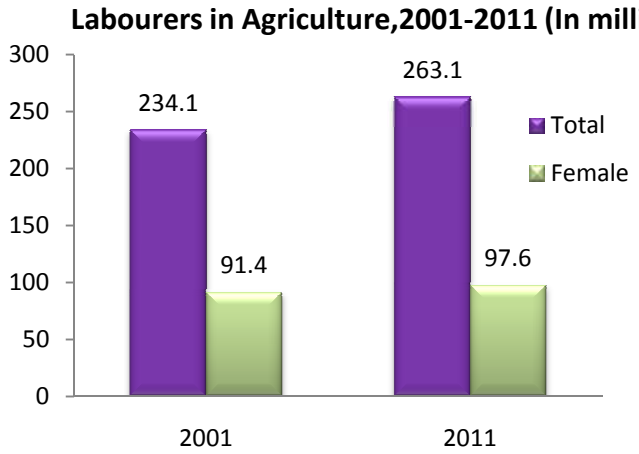
CONCLUSION

In the Telangana state, it can be observed that women's' work participation in agriculture is higher than men in both the census years. The movement of men out of agriculture has led to an increase in women's share of the agricultural workforce. Therefore, there is an urgent need for capacity building of women agricultural labour force to carry out the various farm based activities. Helping them to form collectives/groups will enhance their bargaining power. Forward and backward linkages for the demonstrated technologies need to be provided through monitoring of the adoption of acquired skills on a long-term basis.

Empowering the women workforce with better agricultural skills will enable them to increase production and earn more income which will be used on food, health and education of children. There are evidences

of gender equality strategies and food security strategies being complimentary to each other. There is a strong link between agricultural production, dietary diversity and health and nutritional well being of children.

Figure 1.labourers in Agriculture, 2001-2011



Source: Census of India (2011)

Table: 1District-wise percentage distribution of sectoral composition of Rural Female Workers in Telangana

Districts	Cultivator			Agricultural Labour			Household Industry Workers			Other Workers		
	2001	2011	change	2001	2011	change	2001	2011	change	2001	2011	change
Mahbubnagar	31.5	22.40	**-9.1**	53.4	59.76	**6.36**	4.6	3.05	**-1.55**	10.50	14.79	**4.29**
Adilabad	37.4	23.10	**-14.3**	33.6	47.42	**13.82**	19.0	11.24	**-7.76**	10.0	18.24	**8.24**
Nizamabad	29.1	17.83	**-11.27**	27.8	38.71	**10.91**	27.9	25.19	**-2.71**	15.3	18.27	**2.97**
Medak	34.0	21.49	**-12.51**	44.3	52.45	**8.15**	6.3	7.66	**1.36**	15.4	18.39	**2.99**
Karimnagar	28.6	16.25	**-12.35**	38.9	50.11	**11.21**	22.0	14.97	**-7.03**	10.6	18.66	**8.06**
Nalgonda	27.1	13.81	**-13.29**	**55.9**	67.61	**11.71**	4.2	2.55	**-1.65**	12.7	16.03	**3.33**
Khammam	23.4	12.02	**-11.38**	**66.2**	72.90	**6.7**	1.7	1.29	**-0.41**	8.7	13.79	**5.09**
Warangal	36.1	19.63	**-16.47**	49.8	62.33	**12.53**	4.6	2.82	**-1.78**	9.5	15.23	**5.73**
Rangareddy	38.4	14.31	**-24.09**	43.6	28.38	**-15.22**	2.3	4.10	**1.8**	15.7	53.20	**37.5**
Hyderabad	2.9	3.51	**0.61**	1.0	2.25	**-1.25**	5.5	5.25	**-0.25**	90.6	89.00	**1.6**
Telangana	**28.85**	**16.43**		**41.45**	**48.19**		**9.8**	**7.8**		**19.9**	**27.56**	

Source: computed from census data 2001 and 2011

Table 2 District-wise work participation rate of agricultural labour (Main +Marginal)

District	Work participation rate of agricultural labour(Main +Marginal)					
	2001			2011		
	Female	Male	gap	Female	Male	Gap
Adilabad	42.23	22.40	19.83	47.23	28.35	18.88
Nizamabad	33.84	26.28	7.56	38.71	32.88	5.83
Karimnagar	43.91	25.11	18.80	50.11	32.62	17.49
Medak	50.85	27.84	23.01	52.45	30.33	22.12
Hyderabad	1.27	0.49	0.78	2.25	13.97	-11.72
Rangareddy	39.45	12.18	27.27	28.38	9.96	18.42
Mahbubnagar	59.53	28.99	30.54	59.76	32.27	27.49
Nalgonda	61.22	27.60	33.62	67.61	35.41	32.20
Warangal	56.09	25.61	30.48	62.32	30.58	31.74
Khammam	67.50	36.71	30.79	72.89	45.08	27.81

Source: computed from census data 2001 and 2011

Table: 3 Gender disparities in work participation ratio in districts of Telangana

	Work Participation Ratio								
Districts	**1991**			**2001**			**2011**		
	Female	Male	DI	Female	Male	DI	Female	Male	DI
Mahabubnagar	44.9	55.3	**0.81**	47.2	56.3	**0.83**	47.06	55.60	0.84
Rangareddy	28.4	52.4	**0.54**	25.6	53.4	**0.47**	27.24	47.10	0.57
Hyderabad	7.4	46.0	**0.16**	8.8	48.2	**0.18**	19.10	51.79	0.36
Medak	40.3	55.0	**0.73**	41.4	55.5	**0.74**	43.64	55.79	0.78
Nizamabad	45.2	54.2	**0.83**	44.2	54.3	**0.81**	44.34	54.71	0.81
Adilabad	35.6	53.0	**0.67**	37.0	52.9	**0.69**	18.78	50.43	0.37
Karimnagar	44.3	56.2	**0.78**	43.5	55.5	**0.78**	43.64	55.79	0.78
Warangal	41.0	54.3	**0.75**	41.8	54.5	**0.76**	42.47	54.62	0.77
Khammam	35.8	55.5	**0.64**	39.5	57.0	**0.69**	43.17	57.72	0.74
Nalgonda	41.6	54.8	**0.75**	43.1	54.9	**0.78**	44.26	55.48	0.79

Source: computed from census data 1991, 2001 and 2011

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