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Perception on climate smart technologies among redgram growers in Magadi and Sira Taluk of Ramanagara and Tumkur districts of southern Karnataka

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Abstract
Redgram is an important legume crop of rain fed agriculture in countries like India. Number of methods and practices are being adopted to address climate change challenges by altering cropping patterns, planting dates and farm management techniques. Climate smart technologies are operationally defined as those technologies that enhance agriculture production and productivity through judicious use of resources that improves the sustainability of redgram cultivation through adoption of modern production and risk management technologies under changing climate. The present study was carried out in Magadi taluk of Ramanagara district and Sira taluk of Tumkur district in Karnataka state during 2020 – 21 to assess the perception level of climate smart technologies among redgram growers. A total of 120 redgram growers were interviewed, 60 from each selected taluk of respective districts for the purpose. The results revealed that 45.83 percent of redgram growers possess moderate perception followed by better (29.17) and poor (25.00) perception respectively. Majority of redgram growers (75.83%) had strongly agreed climate smart technologies like the earthing up helps to conserve water and majority of redgram growers strongly agreed by practicing nipping yields better by enhancing the lateral branches (67.50%), majority of redgram (58.33%) farmers agreed, Intercropping of redgram with ragi, cowpea, avare and groundnut helps in nutrients and water use efficiency and a great number of redgram growers (45.00%) agreed bird perches helps to control pod borer incidence in the field.

Keywords: Climate smart technologies, perception, redgram

Introduction
Agriculture zone is one among the most vulnerable zone which is at risk due to the influence from the climate change because entire agricultural productivity is intuitive to variations in climatic conditions and agricultural production is always associated with change in the weather conditions. The Inter-governmental Panel on Climate change (IPCC) defined climate as the average weather, or the statistical illumination in terms of mean and variability of relevant aggregates like temperature, solar radiation, rainfall *etc*., above some duration ranging from months to millions of years. Change in climate is actually a long-term change in the average weather status that have come to define earth's local, regional and global climates i.e., modification of average weather conditions around long term conditions. The influence of changes in climate are global, but countries like India is at high risk because majority of the population is rested on Agriculture. Since agriculture contributes to around 18 percent of India's GDP, 4.50 to 9.00 percent negative influence on yield implicit amount of change in climate to be around up to 1.50 percent of GDP per annum (Venkateswarlu *et al.*, 2013) [4].
Redgram is an important legume crop of rain fed agriculture in countries like India. Number of methods and practices are being adopted to address climate change challenges by altering cropping patterns, planting dates and farm management techniques. Disease resistant varieties of redgram are being developed and distributed by government organisations. In addition to these, most of the farmers are integrated vegetables and animals with redgram cultivation. The residues and waste from each of these components are composted and used on the land, thereby reducing the need for external inputs. The development of advanced model techniques, mapping the effect of climate change on redgram growing regions and providing crop insurance are other examples of managing risks and reducing vulnerability. In India, Maharashtra having maximum area and production under redgram cultivation with 15.33 lakh ha and 13.89 lakh tonnes followed by Karnataka with an area around 12.14 lakh ha and

production for around 8.62 lakh tonnes. Karnataka is followed by Madhya Pradesh with an area of 6.90 lakh ha and production of 7.82 lakh tonnes that is followed by Gujarat with an area of 3.34 lakh ha and production of 3.69 lakh tonnes and Gujarat is followed by Uttar Pradesh with an area of 3.38 lakh ha and production of 3.36 lakh tonnes (Anonymous, 2017).

In Karnataka, Gulbarga having maximum area and production under redgram cultivation with 6,13,760 ha and 5,69,078 tonnes followed by Vijayapura with an area around 3,88,932 ha and production for around 3,30,320 tonnes. Vijayapura is followed by Yadgiri with an area of 1,10,119 ha and production of 74,798 tonnes that is followed by Raichur with an area of 1,02,883 ha and production of 5,69,078 tonnes and Raichur is followed by Bidar with an area of 77,019 ha and production of 34,828 tonnes (Anonymous, 2018).

Ramanagara district is one of the agricultural productive district of Southern Karnataka with annual rainfall of 931.58mm. Cauvery, Arkavathi and Kanva are the three rivers flowing in the district. The district agriculture is grouped under agro-climatic zone 5 which falls under Eastern dry zone. Total geographical area of Ramanagara district is 3516 sq. km out of which 1,62,322 ha are cropped area and supports 3468 ha for redgram cultivation out of its 1,62,322 ha cropped area. Out of 4 taluks of Ramanagara district, Magadi taluk supports 1287 ha for redgram cultivation (Anonymous, 2018).

Tumkur district is one of the agricultural productive district of Southern Karnataka with annual rainfall of 900mm. The district agriculture is grouped under agro climatic zone 4 which falls under Central dry zone. Total geographical area of Tumkur district is 10597sq.km out of which 4.80 lakh hectares are cropped area and supports 10507 ha for redgram cultivation out of its 4.80 lakh ha cropped area. Out of 10 taluks of Tumkur district, Sira taluk supports 2598 ha for redgram cultivation (Anomymous, 2018).

Now a days farmers of Ramanagara and Tumkur district are facing the acute shortage of water and the farmers left the redgram fields fallow. Even though water saving and climate smart technologies are available, the countrymen is not adopting these technologies. Many eco-friendly and sustainable practices are being developed by the scientists.

Perception is one personal interpretation of external events. Perception is defined as the ability to see, hear, or become aware of something through the senses. In the current study perception is operationally defined as the way in which climate smart technologies is regarded, understood, or interpreted by the redgram growers.

Methodology

The research design employed for the study was *ex-post-facto* design, since the phenomenon has already occurred. *Ex post facto study* or post event investigation is a category of research design in which the researcher begins after the event has occurred without the intervention of the researcher. Here the researcher does not have direct control over independent variables because their manifestations have already occurred.

Locale of the research study

Ramanagara district has 4 taluks out of which Magadi taluk has been selected and Tumkur district has 10 taluks out of which sira taluk was selected. The total geographical area of the magadi taluk is 801sq.km out of which 1287 ha comes under redgram cultivation. The total geographical area of the sira taluk is 1556 sq.km out of which 2598 ha comes under red gram cultivation.

Brief description of the study area

Ramanagara district is one of the agricultural productive district of Southern Karnataka with annual rainfall of 931.58mm. Cauvery, Arkavathi and Kanva are the three rivers flowing in the district. The district agriculture is grouped under agro-climatic zone 5 which falls under Eastern dry zone. Total geographical area of Ramanagara district is 3516 sq. km out of which 1,62,322 ha are cropped area and supports 3468 ha for redgram cultivation out of its 1,62,322 ha cropped area. Out of 4 taluks of Ramanagara district, Magadi taluk supports 1287 ha for redgram cultivation (Anonymous, 2018).

Tumkur district is one of the agricultural productive district of Southern Karnataka with annual rainfall of 900 mm. The district agriculture is grouped under agro climatic zone 4 which falls under Central dry zone. Total geographical area of Tumkur district is 10597 sq.km out of which 4.80 lakh hectares are cropped area and supports 10507 ha for redgram cultivation out of its 4.80 lakh ha cropped area. Out of 10 taluks of Tumkur district, Sira taluk supports 2598 ha for redgram cultivation (Anomymous, 2018).

Selection of respondents

Agriculture officers (AAOs) of Karnataka state department of agriculture, Scientists of KVK were consulted in selection of villages. From each of the selected taluks six villages were selected by applying simple random sampling technique. From each of these selected villages 10 respondents were taken for the study and thus, 120 farmers constituted the sample for study.

Table 1: The details of districts, taluks, villages and respondents selected for the study:

District	Taluk Assistant	Village	Respondent
1. Ramanagara	Magadi	Harohalli	10
		Gattipura	10
		Gejjagaragupe	10
		Kalya	10
		Chittanahalli	10
		Kalarikaval	10
2. Tumkuru	Sira	Chikkaagrahara	10
		Battiganahalli	10
		Hanumanahalli	10
		Rangapura	10
		Hemdore	10
		Malekunte	10
Total			120

Perception of redgram growers towards climate smart technologies was measured with the help of schedule developed which is consulted by the experts. The entire schedule consists of 12 statements. Each statement of the schedule is rated on five point response continuum *viz*., Strongly agree, agree, Undecided, disagree and strongly disagree and scores of 5, 4, 3, 2, 1 were given respectively. Accordingly the respondents were grouped as per their perception level by using the formula mean and standard deviation as below.

Perception category	Criteria
Poor	Less than (Mean - 1/2SD)
Moderate	Between (Mean ± 1/2 SD)
Better	More than (Mean + 1/2 SD)

Results and Discussion

Overall perception of climate smart technologies by redgram growers

A close look at Table 2 shows the overall perception on climate smart technologies by small and big farm redgram growers. Two fifth of small farmers had moderate (40.00%) to better (33.33%) level of perception, followed by poor perception (26.67%). On the other hand, in case of big farmers, majority of respondents had moderate (51.67%) to better (25.00%) level of perception followed by poor perception (23.33%).When the pooled sample was considered 45.83 percent, 29.17 percent and 25.00 percent of redgram growers possessed moderate, better and poor perception respectively. The results are in constrant with the (Gorfod Parbat Saiva, 2012) [1] and (Shankar, 2010) [3].

Table 2: Overall perception of redgram growers about climate smart technologies by redgram growers.

Perception level	Small farm redgram growers (n_1=60)		Big farm redgram growers (n_2=60)		Total (n=120)	
	F	%	F	%	f	%
Poor(<41.30)	16	26.67	14	23.33	30	25.00
Moderate(41.30-51.18)	24	40.00	31	51.67	55	45.83
Better(>51.18)	20	33.33	15	25.00	35	29.17
Mean = 46.24 SD = 09.87						

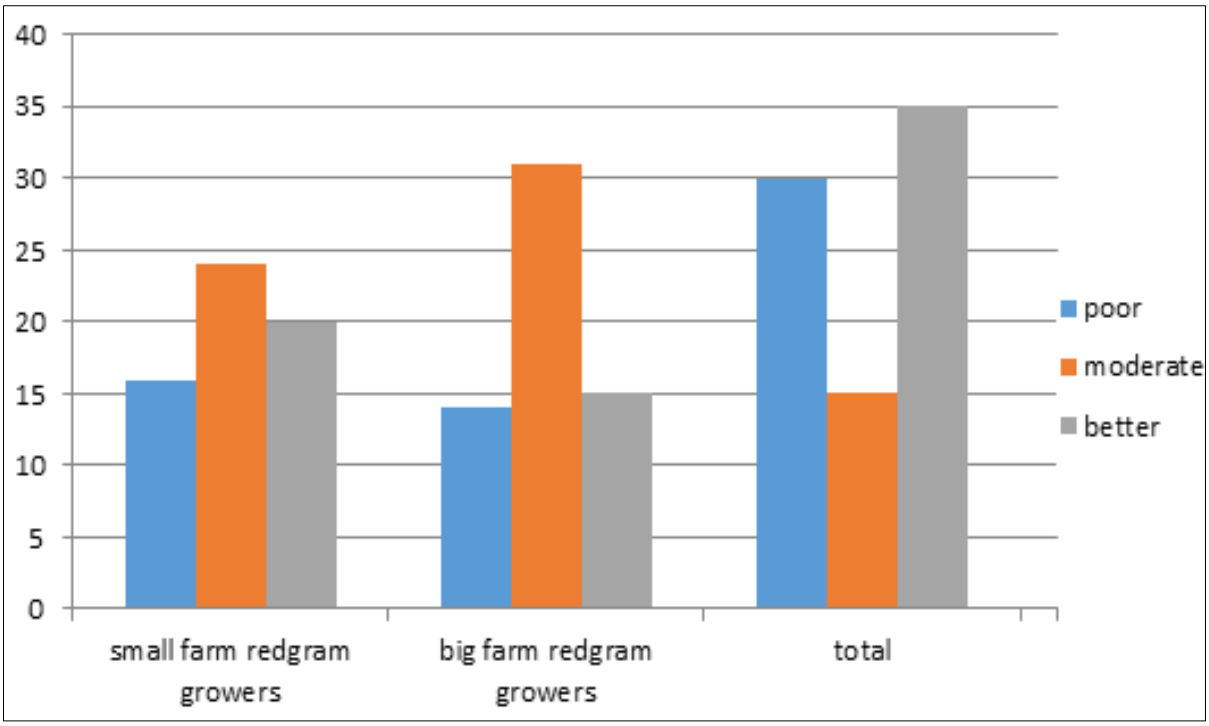

Fig 1: Overall perception of redgram growers about climate smart technologies by redgram growers

Extent of perception on climate smart technologies by red gram growers.

The data in Table 3 shows that, majority of redgram growers (75.83%) had strongly agreed climate smart technologies like the earthing up helps to conserve water and majority of redgram growers strongly agreed by practicing nipping, yields better by enhancing the lateral branches (67.50%) and great portion of redgram growers (62.50%) strongly agreed that cultivation of disease tolerant varieties yields more. majority of redgram (58.33%) farmers agreed, Intercropping of redgram with ragi,cowpea, avare and groundnut helps in nutrients and water use efficiency and majority of redgram farmers (44.17%) agreed delayed monsoon seedlings can be transplanted to get more yield and a great number of redgram growers (45.00%) agreed bird perches helps to control pod borer incidence in the field. A fair number (38.33%) of redgram grower dis agreed the seed treatment with trichoderma viridae helps to control wilt disease. (Shankar, 2010) [3].

Table 3: Extent of perception on climate smart technologies by redgram growers.

Sl. No.	Statements	SA	%	A	%	UD	%	DA	%	SDA	%
1	In case of delayed monsoon, seedlings can be transplanted to get more yield	22	18.33	53	44.17	17	14.17	23	19.17	05	04.16
2	Practicing nipping in redgram yields better through more branches	81	67.50	39	32.50	00	00.00	00	00.00	00	00.00
3	Use of pulse magic spray helps to prevent flower drop and also helps to improve seed setting	51	42.50	41	34.17	14	11.67	00	00.00	00	00.00
4	Cultivation of disease tolerant varieties with stand wilt and yellow mosaic virus which gives more yield	75	62.50	25	20.83	10	18.33	08	06.67	02	01.67
5	Selecting of disease and pest tolerant varieties based on previous incidence	36	30.00	37	30.83	33	27.5	14	11.67	00	00.00
6	Providing earthingup helps to conserve water	91	75.83	29	24.17	00	00.00	00	00.00	00	00.00
7	Application of balanced fertilizers yields more	53	44.17	48	40.00	19	15.83	00	00.00	00	00.00
8	Use of pheromone trap helps to control pests / scales	69	57.50	40	33.33	11	09.17	00	00.00	00	00.00
9	Use of trichoderma viridae helps to prevent wilt disease	24	20.00	30	25.00	10	08.83	46	38.33	10	08.33
10	Use of bird perches can control pod borer incidence in red gram	37	30.83	54	45.00	28	23.33	01	00.84	00	00.00
11	Use of bio fertilizers helps to fix nitrogen /phosphorous and also helps to control diseases	46	38.33	36	30.00	19	15.83	14	11.67	05	04.17
12	Intercropping of redgram with ragi, cowpea, avare and groundnut helps in improving nutrients and water use efficiency	55	45.83	60	50.00	05	04.17	00	00.00	00	00.00

Conclusion

The results revealed that a majority of big farm redgram growers had high perception on climate smart technologies in redgram cultivation compared to small farmers. Hence, the extension functionaries need to intensify their efforts in increasing the perception level of small farm redgram growers particularly through adopting suitable extension strategies and providing critical inputs in time at subsidized rate.

References

1. Gorfad Parbat Saiva., Farmers perception and adoption of groundnut production technology, Ph.D (Agri) Thesis, (Unpub), Junagadh agricultural university, Junagadh; c2012.
2. Manjunath B. A study on perception of precision farming by the farmers.M.Sc. (Agri.) Thesis, University of Agricultural Sciences, Dharwad, Karnataka (India); c2014.
3. Shankar MH. Farmers' perception of Climate change and their adaptations, M.Sc. (Agri) Thesis (Unpub.), Univ. Agri. Sci., Bangalore; c2010.
4. Venkateswarlu B, Maheswari M, Srinivasa Rao M, Rao VUM, Srinivasa Rao CH, Reddy KS, *et al*., National Initiative on Climate Resilient Agriculture (NICRA), Research Highlights, Central Research Institute for Dryland Agriculture, Hyderabad; c2013.