

Participatory Decision Support System – A Recent Approach Towards Designing Farmers Friendly DSS for Horticulture Crops in Meghalaya

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Abstract: Decision support system since it was designed first time in 70s took various forms from simple DSS to PDSS to IDSS (integrated decision support system). some of these types could not take off because of lack of farmers participation in its designing this excluded problems faced by farmers in cultivation of different crops. This failure of different DSS to solve the farmer's problem led involment of the farmers in the designing of the DSS and this took the form of the PDSS (Participatory Decision Support System). While designing PDSS participation of the farmers ensured by providing interview schedule to them Project is taken in the state Meghalaya purposely because its climate is suitable for both vegetable and fruits then District Ri-Bhoi was selected purposively as the study locale for survey and collection of data in respect of fruit and vegetables, because Institute is working in these villages already so quick feedback will be getting if these villages will be taken as the study area for the project 5 villages viz: Mynan, Nonglakhia, Nongkya, Nongthymmai, Kyrden were selected purposely from the Meghalaya which are growing both fruit and vegetables. Profile information of these villages in respect of fruits and vegetables cultivation were collected through secondary data. Then 20 farmers were selected from each village. A decision support system based on the bottom up and participatory approach is a better one as compared to others .It provides problem based solution which are area specific .thus this type of DSS is more practical and have more adaptability among the farmers. Collection of primary data ensures participation of the farmers in the designing of the DSS thus making it Participatory, area specific, problem oriented.

Key words: PDSS, ICT, Horticulture crops

INTRODUCTION

Decision support system since it was designed first time in 70s took various forms from simple DSS to PDSS to IDSS (integrated decision support system).some of these types could not take off because of lack of farmers participation in its designing this excluded problems faced by farmers in cultivation of different crops. This failure of different DSS to solve the farmer's problem led involment of the farmers in the designing of the DSS and this took the form of the PDSS (Participatory Decision Support System). While designing PDSS participation of the farmers ensured by providing interview schedule to them. Interview schedule

provides data about the socioeconomic-financial or technical problems faced by them .then these issues are being addressed by incorporating the solution of these problems while designing the PDSS. This type of the DSS will be based on the area specific, problem oriented, participatory and bottom up approach this makes the DSS user friendly, interactive, solution oriented and practical. Different apps, success stories, news highlights and FAQs makes the DSS to be famous among the ICT enabled farmers. DSS can be used by the farmers through phones (android) by installing apps related to it, since most of the farmers do not have access to internet enabled computer system and it is not

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possible to install kiosks in every village due to lack of funds. Demonstration on how to use the DSS could be provided at the institute or farmers field through kiosks, internet enabled laptop/desktop/tablets etc. After taking feed of the farmers through feedback forms problems in the DSS could be diagnosed and solution could be incorporated in the DSS.

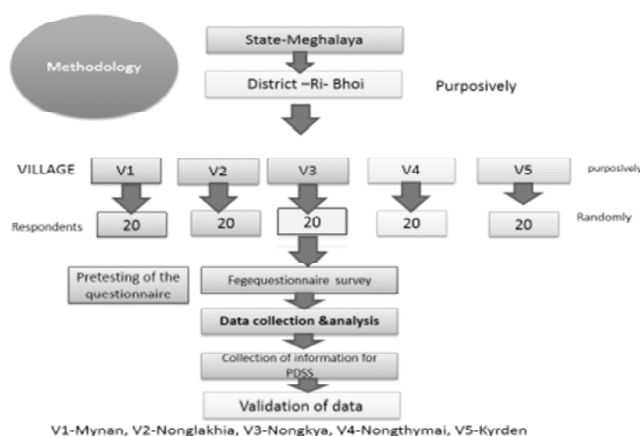
MATERIALS AND METHODS

Project is taken in the state Meghalaya purposely because its climate is suitable for both vegetable and fruits then District Ri-Bhoi was selected purposely as the study locale for survey and collection of data in respect of fruit and vegetables, because Institute is working in these villages already so quick feedback will be getting if these villages will be taken as the study area for the project 5 villages viz: Mynan, Nonglakhia, Nongkya, Nongthymmai, Kyrden were selected purposely from the Meghalaya which are growing both fruit and vegetables. Profile information of these villages in respect of fruits and vegetables cultivation were collected through secondary data. Then 20 farmers were selected from each village. Who are growing both fruits and vegetables. Among fruits Data has been collected from farmers through interview schedule. 20 farmers from each village were selected

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RESULT AND DISCUSSION

Most of the farmers of the selected villages are growing vegetables in Rabi season and fruit crops and maize and rice in kharif crop, having small land holdings, both upland and lowland ecosystem, having acidic soils, most of the farmers lacking awareness about soil testing, rainfall is source of irrigation for kharif crops and jalkund as a source of irrigation for Rabi crops, furrow method of irrigation is adopted by vegetable growers, and drip method is used by the fruit growers. Good quality Seed or planting material for horticulture crops is being provided by the ICAR. Multi cropping is followed by the most of the villagers. Fruits and vegetables has maximum yield potential in the villages, most of the farmers are not satisfied with the yield of the fruit and vegetables, products are sold in the local market and shillong. Price fetched by the farmers is not satisfactory.



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Table 1
Profile information of these villages in respect of fruits and vegetables cultivation were collected through secondary data

S.No.	FRUITS	Area in Ri -Bhoi	Area in Meghalaya	State share%	rank
1.	Pineapple	3669	10766	34.07	I
2.	Papaya	160	643	24.88	II
3..	Banana	898	6919	12.97	IV
4.	Khasi mandarin	233	8323	2.79	VI
5.	Assam leman	45	1042	4.31	V
6.	strawberry	19	94	20.21	III
SPICES					
1.	Black pepper	147	911	16.13	I
2.	Ginger	979	9461	10.34	II
3.	Turmeric	121	2000	6.05	III
4.	Chilli	93	1893	4.918	IV
VEGETABLES					
1	Broccoli	57	183	31.14	I
2	Capsicum	90	442	20.36	II
3	Okara	83	427	19.43	III
4	Cucumber	88	508	17.32	IV

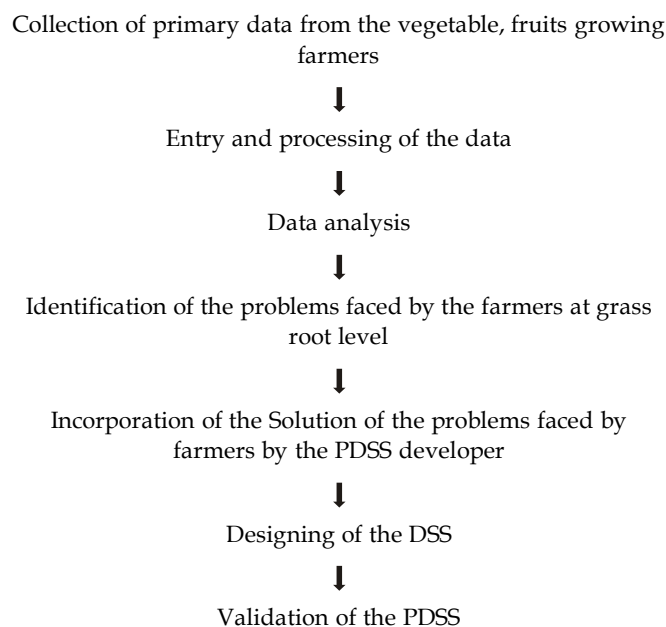
Table 2
Parameters to be included in selecting vegetables, fruits and spices

PRIORITY ATTRIBUTES		V1	V2	V3	V4	V5
Technology availability	F	Pineapple	Pineapple	Papaya	Pineapple	Citrus
	V	Broccoli, cucumber, capsicum, bitterguard				
	S	Zinger, turmeric, chilli				
Source of information	F	Pineapple, papaya, citrus				
	V	Broccoli, cucumber, capsicum, bitterguard				
	S	Zinger, turmeric, chilli				
Farmers' preference	F	Pineapple	Pineapple	Papaya	Banana	Citrus
	V	Broccoli	Bitter guard	Capsicum	Broccoli	
	S	Zinger	Zinger	Zinger	Turmeric	Chili
Germ plasm availability	F	Pineapple	Pineapple	Banana	Papaya	Banana
	V	Broccoli, Bitter guard, Capsicum				
	S	Zinger				
PRIORITY ATTRIBUTES		V1	V2	V3	V4	V5
Maximum area coverage.	F	Pineapple	Papaya	Banana	Papaya	Pineapple
	V	Broccoli	Capsicum	Okara	Capsicum	Cucumber
	S	Zinger	Zinger	Turmeric	Zinger	Black pepper
Yield potential,	F	Pineapple	Banana	Papaya	citrus	pineapple
	V	cucumber	broccoli	capsicum	broccoli	Bitter gouard
	S	turmeric	Black pepper	zinger	zinger	turmeric
Market scope	F	Pineapple, Papaya, Banana				
	V	broccoli	cucumber	Bitter gouard	okara	cucumber
	S	Turmeric, zinger, Black pepper				
Post harvesting scope	F	pineapple				
	V	Capsicum				
	S	Turmeric ,zinger, Black pepper				

F=FRUIT,V=VEGETABLE,S=SPICES

V1-Mynan, V2-Nonglakhia, V3-Nongkya, V4-Nongthymai, V5-Kyrden

Flow chart 1. Designing of Participatory, problem Oriented and bottom up approach based DSS.



Vegetables, fruits and spices has maximum marketing potential in the village. Among fruits maximum area coverage and yield potential is found in pine apple .Growing, selling and processing preferences are also found in pineappleLocal, improved and hybrid germplasm is also available for pineapple. In technology availability propagation, spacing, planting, intercultural operation and processing related technology is available for pineapple. There is good marketing scope is available for both pineapple and banana in local market and through middleman.

CONCLUSION

A decision support system based on the bottom up and participatory approach is a better one as compared to others .It provides problem based solution which are area specific .thus this type of DSS is more practical and have more adaptability among the farmers. Collection of primary data ensures participation of the farmers in the designing of the DSS thus making it Participatory, area specific and problem oriented.

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