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Seminar Report
On
“KRISHI BHAGYA SCHEME: AN OVERVIEW”

Submitted to

Seminar Teachers

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1. INTRODUCTION

Water is the most precious resource for agriculture. It is the ‘wonder liquid’ without which nothing exists, with which everything lives! In turn, it gives our earth the name as a living planet. Earth is called as blue planet because 75.00 per cent area is covered by water; hence water is considered an astonishing element in Ayurveda, which means it is a wonder medicine that cures all most all the ills. Half of all workers on the earth are employed in water-related sectors. In this concern, the agriculture and rural development as an integrated concept of growth and poverty elimination have been of paramount concern in the entire consequent government scheme.

Nevertheless, water as a natural resource of the world constitutes 97.39 per cent water is in the sea, which is salty and unfit for agriculture. The only other 2.61 per cent is the freshwater availability, perhaps in that 77.23 per cent is in the polar region and glacier, only a minor fraction of water on earth is present in the groundwater, lakes, rivers, atmosphere which is most useful to the mankind. The growing population puts tremendous pressure on the water resource. The annual per capita availability of water in India has decreased from 5000 m³ in 1950 to 1200 m³ in 2010 and projected to decrease further below 1000 m³ by 2025 (MOWR, 2011). Hence the World water day is on 22nd March 2020 has the theme of “Water and climate change” and explores how these two topics are inextricably linked, which assists in improving the utilization of freshwater and advocating sustainable management of water resources for several uses (Ministry of water resources).

2. Objectives of Seminar

Agriculture background of India

A majority of the Indian population exists in villages, and above 50.00 per cent of them rely on agriculture (directly or indirectly). One of the greatest threats to farming is water scarcity. Rain-fed agriculture constitutes 55.00 per cent of net sown area in the nation. The annual rainfall of the country varies from 400mm to >1200 mm, varying both in place and time. In the low to medium rainfall regions, the occurrence of high-intensity rainfall is very meager i.e., only for a short duration. Hence the rain-water management is necessary to increase water efficiency, since the first light of independence concerning efforts has been made to uplift the standards of farmers and

rural masses to offer the solution that enables rain-fed farming towards sustainable agriculture.

With this back drop, the present seminar has been conceptualized with the following objectives:

1. To know the concept of Krishi Bhagya Scheme
2. To know the components of Krishi Bhagya Scheme
3. To review the related research studies

3. Krishi Bhagya Scheme

The Krishi Bhagya Scheme was implemented on 14th Feb 2014 in five prime dry and zones covering 23 districts. In 2014-15 it was decided to implement in 9 lakh hectares of land to increase the agricultural productivity and income level of the farmers. The Government of Karnataka launched Krishi Bhagya Scheme exclusively for the dry-land farmers who rely on the annual rainfall for their farming. Since a majority of the Karnataka's agricultural land over 70.00 per cent is under rain-fed conditions, farming activities on the dry lands become challenging during erratic rainfall period. To ensure irrigation for sustainable agriculture, Krishi Bhagya Scheme was started. This scheme incorporates effective rainwater conservation measures to improve productivity. The Government of Karnataka has aided over one lakh farmers in the rain-fed areas of 131 taluks in 25 districts, extending financial assistance of 968.37 crores.

Under the Krishi Bhagya Scheme, more emphasis is given to help farmers to take up water conservation measures such as constructing farm ponds in their agricultural land and saving every drop of rainwater for using during the dry spells to protect standing crops. The provisions availed under this Krishi Bhagya Scheme are that construction of climate-resilient technology for rain-fed agriculture like farm ponds, poly houses, polythene sheet, sprinklers/drippers, a motor pump is offered at a subsidized rate which has assisted the farmers in the harvesting of the excess rainwater on a farmer's field. The primary purpose of the strategy is that harvested water in the farm ponds is being applied for providing life-saving protective irrigation for rain-fed crops through drip and sprinkler irrigation system, the polythene sheets are provided to prevent the percolation losses and shade nets for reducing evaporation losses of the

water from the farm ponds, poly-houses for protective cultivation of an assortment of crops like vegetables, greenhouse for high-value crops, floriculture, acclimatizing fruit crop growing for the export market, encouraging multiple cropping, inter cropping systems and the motor pumps to raise the water from the conserved structures. The various components of the Krishi Bhagya Scheme play a vital role in stabilizing crop production during the dry spells.

4. Major objectives of the scheme set by Government of Karnataka

- The government is ambitious in revolutionizing Karnataka's agricultural sector. The implementation of the scheme primarily focuses on securing the farmer's income by taking up on-farm rainwater conservation practices.
- Farmers can increase their productivity using stored rainwater in farm ponds.
- It also encourages the farmers to adopt modern technologies at a subsidized price to farmers for efficient use of water.
- Eventually the government helps to possess good agricultural practices like Integrated farming system, mixed cropping, intercropping with short duration crops, which are provided to improve the farmers income and ensure a better standard of living.

5. Eligibility and selection of farmers

- According to the Department of Agriculture, farmers who possess one acre land and more is applicable to avail the benefits of the scheme.
- Farmers who have received subsidy for pump sets and drip irrigation system during the last three years are not eligible for the fund for them now. However, can avail fund for farm ponds.
- Applications are issued in Raitha Samparka Kendra's (RSK).

ಕೃಷಿ ಭಾಗ್ಯ ಯೋಜನೆ
ರೈತರು ಸಲ್ಲಿಸುವ ಅರ್ಜಿ ನಮೂನೆ

ಅರ್ಜಿ ಕವು ಸಂಖ್ಯೆ:

ರೈತರ ಹೆಸರು/ತಂದೆಯ ಹೆಸರು:

ಗ್ರಾಮ:

ಹೋಬಳಿ:

ತಾಲ್ಲೂಕು:

ಸರ್ವೆ ನಂಬರ್ ಮತ್ತು ವಿಸ್ತೀರ್ಣ:

ಬ್ಯಾಂಕ್ ಖಾತೆ ಸಂಖ್ಯೆ ಮತ್ತು ವಿಳಾಸ:

1. ಸೂಚನೆಗಳು:

- ✓ ಸದರಿ ಯೋಜನೆಯಡಿ ಪ್ರಸ್ತಾವನೆ ಸಲ್ಲಿಸುವ ಫಲಕಗಳಿಗೆ ಫಲಕ ಅನುಷ್ಠಾನದ ಪ್ರಗತಿಗನುಗುಣವಾಗಿ ಎರಡು ಹಂತಗಳಲ್ಲಿ ಸರ್ಕಾರದ ಅನುದಾನ ಒಡುಗಡೆ ಮಾಡಲಾಗುವುದು. (ಮೊದಲನೇ ಹಂತು ಪಾಲಿಫಿನ್ ಸಹಿತ ನೀರು ಸಂಗ್ರಹಣಾ ರಚನೆ ನಂತರ ಮತ್ತು ಎರಡನೇ ಹಂತು ಭೂತರ ಫಲಕ ಅನುಷ್ಠಾನದ ನಂತರ)
- ✓ ಫಲಕ ವೆಚ್ಚದಲ್ಲಿ ಪರಿಷ್ಕೃತ ಜಾತಿ/ಪಂಗಡದ ರೈತರು ಶೇಕಡೆ 10ರಷ್ಟು ವಂತಿಕೆ ಫಲಿಸಬೇಕಿರುತ್ತದೆ. ಭೂತರ ವರ್ಗದ ರೈತರು ಶೇಕಡೆ 20ರಷ್ಟು ವಂತಿಕೆ ಫಲಿಸಬೇಕಿರುತ್ತದೆ.

2. ಕೃಷಿ ಭಾಗ್ಯ ಯೋಜನೆಯಡಿ ತೆಗೆದುಕೊಳ್ಳಲು ಪ್ರಸ್ತಾವನೆ ಸಲ್ಲಿಸುತ್ತಿರುವ ಫಲಕಗಳು

ಕ್ರ ಸಂ	ಫಲಕ	ತೆಗೆದುಕೊಳ್ಳುವ ಫಲಕ/ವಿಸ್ತೀರ್ಣ	ಫಲಕ ವೆಚ್ಚ
1	ಸೃಳದಲ್ಲ ಮಣ್ಣಿನ ತೇವಾಂಶ ಸಂರಕ್ಷಣೆ		ಮಾರ್ಗಸೂಚಿ ಅನುಬಂಧ-02ರನ್ವಯ
2	ಪಾಲಿಫಿನ್ ಸಹಿತ ನೀರು ಸಂಗ್ರಹಣಾ ರಚನೆ		ಮಾರ್ಗಸೂಚಿ ಅನುಬಂಧ-03ರನ್ವಯ
3	ಡೀಸೆಲ್ ಪಂಪ್‌ಸೆಟ್(ಗರಿಷ್ಠ 5 ಹೆಚ್.ಎ)		
4	ತುಂತುರು ನೀರಾವರಿ ಫಲಕ (ಗರಿಷ್ಠ 0.5 ಹೆಚ್ ವಿಸ್ತೀರ್ಣಕ್ಕೆ)		
5*	ಬೆಳೆ ಪದ್ಧತಿ ಪ್ರಾತ್ಯಕ್ಷಿಕೆ(ಅನುದಾನವು ಗರಿಷ್ಠ ಒಂದು ಹೆಕ್ಟೇರಿಗೆ ಸೀಮಿತವಾಗಿರುತ್ತದೆ.)		(ವಿವರ; ಅನುಬಂಧ 4ರಲ್ಲಿ ನೀಡಲಾಗಿದೆ)
	1.ಏಕದಳ ಧಾನ್ಯ ಆಧಾರಿತ		
	ದ್ವಿದಳ ಧಾನ್ಯ ಆಧಾರಿತ		
	ಎಣ್ಣೆಕಾಳು ಬೆಳೆ ಆಧಾರಿತ		
	ರೇಷ್ಯೆ ಬೆಳೆ (ಒಂದು ಹೆ.ಗೆ)		
	ವಾರ್ಷಿಕ ತೋಟಗಾರಿಕೆ ಬೆಳೆ		

6. Features of Krishi Bhagya Scheme

- The project will be implemented in 45 thousand hectares per year where more than one lakh farmers benefit every year
- Availability of modern equipment
- Reasonable price
- Under the scheme, the farmers obtain grants for constructing farm ponds (Krishi Honda) to conserve rainwater and for buying lift pumps, diesel motors to draw water
- Availability of timely service
- Moreover, this program assists the farmers to earn higher income by enabling them to construct polyhouses and put up shadenets to cultivate hybrid vegetables and flower crops
- Quality service
- Advance booking facility

7. Components of KBS

In-situ soil moisture conservation

- The farmers should construct different in-situ soil moisture conservation structures in the field
- The following structures were included in package

- Compartment bunding
- Conservation furrow
- Graded bund
- Zing conservation terrace
- Contour bund

i. Farm pond

Krishi Honda in Krishi Bhagya Scheme is a farm pond dug to store rainwater that can help irrigate about five acres of land during the dry spells. The agricultural loan scheme allocates funds for the purchase of polythene tarpal and fencing along with the components required for the construction of Krishi Honda,

which approximately costs Rs.1.75 Lakhs. The Government grants a subsidy up to 90 per cent for the Scheduled Castes and Scheduled Tribes and 80 per cent for other farmers.

- ❖ Farm pond is the main component of Krishi Bhagya Scheme
- ❖ The size of farm pond should be decided based on the size of land holdings of the farmer
- ❖ Water conservation by using polythene/ tarpaulin in farm ponds
- ❖ The harvested rain water can be utilized effectively by adopting protective irrigation technologies
- ❖ This intervention helps farmers to harvest surplus of rain water and stored effectively to irrigate crops efficiently
- ❖ Stored rainwater that can help to irrigate land during the dry spells
- ❖ The subsidy 80.00 (general) and 90.00 per cent (SC/ST) was provided in the scheme



Farm pond with tarpaulin



Farm pond without tarpaulin



Farm pond with fencing

Earlier there is no provision of providing fencing later on it is made mandatory to obtain grants under Krishi Bhagya Scheme

Design specifications of farm ponds constructed under KBS

Farm pond size L×W×D	Catchment area
12 m × 12 m × 3 m	2
15 m × 15 m × 3 m	3
21 m × 21 m × 3 m	5
28 m × 28 m × 3 m	8
30 m × 30 m × 3 m	10

ii. Diesel pump set

- Diesel pump set was provided for lifting harvested rain water from farm ponds and it helps for irrigation.
- The government of Karnataka was providing subsidy for diesel pump (2HP and 5HP) to the extent of 50.00 per cent for general category and 90.00 per cent for SC/ST category farmers.
- If a minimum of four farmers come together to utilize the pump sets, then it will be given free of cost or else there will be 50% subsidy for individual farmer.

(ಕನಿಷ್ಠ ರೂ.20/- ರ ಬಾಂಡ್ ಪೇಪರ್)

ಕೃಷಿ ಭಾಗ್ಯ ಯೋಜನೆಯಡಿ ರೈತರು ಒಟ್ಟಾಗಿ ಡೀಸೆಲ್ ಪಂಪ್ ಸೆಟ್ ಅನ್ನು ಉಚಿತವಾಗಿ ಪಡೆಯಲು
ಬರೆದುಕೊಂಡ ಮುಕ್ತಳಕೆ

ಶ್ರೀಮತಿ/ ಶ್ರೀ 1) _____ 2) _____
3) _____ ಮತ್ತು 4) _____ ಆದ ನಾವು,
_____ ಗ್ರಾಮ _____ ಹೋಬಳಿ,
_____ ತಾಲ್ಲೂಕು, _____ ಜಿಲ್ಲೆಯ ರೈತರಾಗಿದ್ದು,

ಕ್ರಮವಾಗಿ ಸರ್ವೆ ನಂಬರ್ _____ &
_____ ರಲ್ಲಿ ಕೃಷಿ ಭಾಗ್ಯ ಯೋಜನೆಯಡಿ ಕೃಷಿ ಹೊಂಡಗಳನ್ನು ನಿರ್ಮಿಸಿರುತ್ತೇವೆ.
ನಾವೆಲ್ಲರೂ ಒಟ್ಟಾಗಿ ಕೃಷಿ ಭಾಗ್ಯ ಯೋಜನೆಯಡಿ ಡೀಸೆಲ್ ಪಂಪ್‌ನ ಅನ್ನು ಉಚಿತವಾಗಿ ಪಡೆದು
ಹೊಂದಾಣಿಕೆಯಿಂದ ನೀರನ್ನು ಕಾರ್ಯಕ್ಕೆ ಉಪಯೋಗಿಸಲಾಗುವುದೆಂದು ಧೃಡೀಕರಿಸುತ್ತೇವೆ. ಇದಕ್ಕಾಗಿ
ಶ್ರೀ _____ ಇವರ ಹೆಸರಿಗೆ, ಡೀಸೆಲ್ ಪಂಪ್‌ನ (ಎವರ)
_____ ಸರಬರಾಜು ಮಾಡಲು ಒಪ್ಪಿದ್ದು, ಸದರಿ ಪಂಪ್‌ನ ನಿರ್ವಹಣೆಯ ಜವಾಬ್ದಾರಿಯನ್ನು ನಾವೆಲ್ಲ ಒಟ್ಟಾಗಿ ವಹಿಸಿಕೊಳ್ಳುತ್ತೇವೆ. ಮರು ಮಾರಾಟ ಮಾಡುವುದಿಲ್ಲವೆಂದು
ಈ ಮೂಲಕ ಧೃಡೀಕರಿಸುತ್ತೇವೆ.

ಸಮುದಾಯ ನಿರ್ವಹಣೆಯಲ್ಲಿ ಯಾವುದೇ ಸಮಸ್ಯೆ ಉದ್ಭವವಾದಲ್ಲಿ ನಮ್ಮ ಹಂತದಲ್ಲಿಯೇ
ಬಗೆಹರಿಸಿಕೊಳ್ಳುವುದಾಗಿ ಈ ಮೂಲಕ ಮುಕ್ತಳಕೆ ನೀಡುತ್ತಿದ್ದೇವೆ.

ಸಹಿ ಹಾಗೂ ವಿಳಾಸ

1)

2)

3)

4)

iii. Micro irrigation

- At critical stage of crop growth, there is a provision of providing protective irrigations by using micro irrigation technologies under Krishi Bhagya Scheme on subsidy basis
- Drip irrigation (60-70% water is saved)
- Sprinkler irrigation (40-50% water is saved)
- A farmer can get micro irrigation facilities up to one hectare of cultivable land. About 90.00 per cent subsidy was given for all farmers



iv. Poly house

- Polyhouse Production practices could be characterized as a farming process where in the microclimatic conditions around the plant body are regulated partially or entirely according to the prerequisite of plants grown amid their time of growth in their natural habitat
- Polyhouse production is a widely recognized farming method that is generally made of transparent polyethylene sheets which are thin, inexpensive, and flexible creating an indoor independently controlled environment
- Based on structures of poly house, subsidies can be provided as per National Horticultural Mission (NHM) standards
- NHM will be providing 50.00 per cent subsidy and remaining 50.00 per cent amount should be paid by the farmer on his own or loan



- Construction of green house units and shade nets
- The Krishi Bhagya package has been divided into two groups
- **With poly house** - 50% subsidy (10 to 13 lakhs)
- **Without poly house**
- Horticulture crops: 80% (1.6 lakhs) subsidy for general category and 90 % (1.8 lakhs)for SC/ST
- Agriculture crops: 80% (1 lakh) subsidy for general category and 90 % (1.1 lakhs) for SC/ST

8. Subsidies under the scheme

Unit	General category	SC/ST
Farm pond with polythene cover	80	90
Diesel pump set	50	90
Sprinkler	90	90
Plastic sheets	50	50
Plastic pipes	50	90

9. Progress of Krishi Bhagya Scheme

- Farmers have been promoted to further implementation of the project at the earliest stage of KBS.
- This includes the interest of the Minister of agriculture and deputy commissioner.
- After the authorities visited the successful farmers' field, most farmers are gradually interested in planning and adopting it.
- Agricultural campaigns were conducted across the state and farmers were given a wide range of campaigns
- Now that's the result. So far, more farmers have been participated in the government's agriculture scheme than the expected
- There are 96,312 farm ponds and 2,447 poly houses/shade nets in the state and Rs. 891.16 crore grant is spent
- The fact is that the farmers' shareholders are open to the agrarian scheme

10. Benefits of Krishi Bhagya Scheme

- This scheme helps in increasing farm productivity.
- Infusion of new technology and equipment.
- Sustainable agricultural practices.
- Better water management and irrigation facilities.
- This scheme also helps to grow high-value crops in the poly houses.
- Water harvested in the pond helps the farmers to protect the crops when there is scarcity of rains.

11. Extending the Krishi Bhagya Scheme to Malnad areas

- Extension of the Scheme Previously, the scheme had been restricted to rain-fed agricultural regions where the scheme has been now extended to the coastal and Malnad districts.
- In the recent past, there was an extreme dry spell even in the malnad areas leading people to drift to urban areas and leaving agriculture. So, incidentally the scheme has been extended in the year 2016 to the Coastal and Malnad districts like Dakshina Kannada, Shivamogga, Chikkamagaluru, Kodagu, Udupi *etc.*, for the better utilization of the water via farm ponds.

12. Expenditure on Krishi Bhagya Scheme by Government of Karnataka

- Data illustrates that during 2014-15, 484.17 crores were released as subsidies to farmers under the Krishi Bhagya Scheme.
- In 2015-16 nearly 347.56 crores were spent under the program.
- Whereas during the year 2016-17, 151.61 crores and in 2018-19 till the date 169.23 crores has been spent on the Krishi Bhagya Scheme in Karnataka.(Karnataka State Budget, 2018-19).

13. Third Party Inspection & Impact Evaluation of Krishi Bhagya Yojane in Karnataka State

Suggestions/Policy inputs for overall improvement of the scheme

The Technical Committee of Karnataka Evaluation Authority (KEA) at its 44th meeting held on 17 July 2019 approved the draft Evaluation report submitted by NABCONS to the Department of Agriculture. Further, the committee advised NABCONS to submit a supplement to the report on its suggestions to the following observations made by the committee.

- i. Suggest for a policy change that the farmers without borewells to be identified as beneficiaries under the scheme.
- ii. Recommendations to include type of crops to be grown with high returns and less water consumption and focus on marketing
- iii. Recommendations should be specific evidence based and related to objectives.
- iv. In the estimation of the impact on production and income the productivity measure to be isolated from the impact made due to the existence of a borewell.
- v. Bring out the impact of Krishi Honda on ground water levels and promotion of dry land Horticulture under the scheme.

I The recommendations/ suggestions covering the above aspects are furnished below:

- i. The change in the cropping pattern after Farm Pond construction has enabled the farmers to get better returns. It is, however, observed from the field study that a large number of farmers continue to raise the same crop and only a few farmers have adopted change of cropping pattern like cultivation of Tomato and Red Chilli in place of existing crops viz., Ragi and Pulses. Such farmers could substantially increase their income and in respect of Red Chilli it was noticed that the income has actually doubled. Success Stories of farmers who have obtained higher income due to change in cropping pattern have also been furnished in the Report. Further, the various crops introduced by the farmers after construction of Farm Pond is furnished in Table 47. Hence, in places where it is suitable, farmers may be encouraged to go for short duration vegetable crops. The Department may suggest

suitable changes in cropping pattern taking into account the agro-climatic conditions and use of water efficient devices viz., Drip/Sprinkler, rain fall situation in specific areas and availability of marketing/ processing facilities for the crops being suggested.

- ii. Keeping in view the objective of supporting Farm Ponds as a coping mechanism to provide critical irrigation in rain fed areas, priority may be given to the farmers who are primarily dependent on Rainfall for crop cultivation. Karnataka has been frequently facing drought & drought like situations and it was observed during the period of study, the ground water levels are depleting faster. Further, availability of power during day time was very limited and farmers who have borewells were not able to irrigate their crops during day time. In order to deal with these challenges, Farm Ponds have been provided by the Department to such farmers also. It is observed in the field that farmers having borewells who were supported for establishment of Farm Pond have been able to increase net cultivated area Further, some of them could change their cropping pattern from field crops to more remunerative crops
- iii. The primary objective of the Farm Pond is to harvest the rainwater so as to provide supplementary irrigation for the crops taken up for cultivation and increase the average productivity of crops. The Department has provided polythene sheets to arrest percolation of collected rain water and to use it for providing critical irrigation. Therefore, the scope of the study has been confined to assess the impact of the Farm Ponds on the increase in the yields, change in cropping pattern, area brought under supportive irrigation, etc., instead of possible impact on the ground water levels. It was generally observed that some of the farmers have taken up dry land horticulture viz., mango, pomegranate, Ber, etc. also alongside their field crops. The run-off collected in the Farm Ponds was used to provide needed critical irrigation to these crops.

Suggested Policy Interventions :

Technical aspects

i. Farm Pond

- It is observed from the field study that site selection in many cases is not according to the watershed concept. Site selection needs to be given more focus and the related

technical specifications viz., slope, gradient, direction and position of inlet and outlet pipe have to be recorded and ensured that the farmer has constructed the pond accordingly. The accountability and certification may be clearly notified in the guidelines.

- To ensure maximum storage of harvested rain water frequent desilting may be ensured. Installation of appropriate **inlet with filter** and outlet to avoid soil erosion will prevent accumulation of silt in the farm pond.
- There is a need to put in place a mechanism to ensure that proper quality of polythene sheet is supplied by vendors.
- Keeping in view the spirit behind the scheme i.e. harvesting and providing lifesaving irrigation, there is a need to replace the polythene sheet after 3 years as it is prone to damages and as a result water harvesting is affected due to percolation.
- As no support is given for polythene lining in black soil, an alternative mechanism may be supported to avoid bund/structure collapsing as observed during the field study.
- In order to address the negative externalities like increasing rates of evaporation, the farm ponds may be covered with solar paneled enclosures which can give the beneficiaries of assured power and to give reasonable returns by selling the excess power.
- Fencing of farm pond may be made mandatory. The Agriculture Department may be made accountable for its implementation strictly to avoid unfortunate incidence of human/cattle falling in to farm pond.

ii. Poly House

- Shade nets/ poly houses are vulnerable to strong winds. Department may insist upon facilitating wind breakers by the farmers before sanction/release of subsidy
- In places where high temperature prevails like Bellary and Koppal districts, the green shade nets were found to be useful only for nursery purpose. It is suggested to consider provision of white colour shade net in such hot climate areas.

Awareness creation

i. Farm Ponds

- In order to effectively use the Farm ponds constructed for reaping sustainable benefits in the long run, there is a need to create awareness amongst beneficiary

farmers on maintaining the depth of farm pond by removing silt and not to close the farm ponds.

- Awareness may be created in areas where change in cropping pattern is possible for increasing income levels.

ii. Poly House

- One week intensive training to farmers to acquire necessary skills in maintaining the poly house and also growing of different suitable crops for cultivation is needed.
- More clarity on creating mandatory components under the poly house scheme needs to be provided at the field level.
- Creating awareness on demand for various crops, season-wise demand and supply position and also tie-up arrangement with marketing agencies (malls, processing industries, reputed hotels, etc.) so as to avoid glut in the market.
- It is observed from the field study that about 25% of farmers belonging to SC/ST category have raised local variety crops instead of cultivating high value crops in their Poly Houses which has defeated the major objective of increasing Farmers' income. Poor price realization on account of local varieties will dent the viability aspect. It is suggested that these farmers may be adequately provided training on technical aspects of crop cultivation, maintenance of Poly House and its components, marketing and exposure visits to successful models.
- There is a need to develop farmer friendly training modules by the Dept. of Horticulture for different crops grown in Poly Houses. Also, there is a need to provide practical training in management of various parameters of protected cultivation. A 'Telegram' or 'Whatsapp' group of such trained farmers involving

Other Recommendations

i. Farm pond

Short term measure

- a. There have been instances of humans and animals falling in the Farm Ponds and some have lost their lives. Since the depth of the farm pond is prescribed to be 3 metres, it is prone to dangers especially during the rainy season. Therefore, it is recommended that provision of subsidy for erecting fencing may be done as that would help in saving lives.

- b. Provision for Diesel Pump sets with subsidy may be considered for individual farmers instead of on group/community basis as per present guidelines.
- c. Feasibility of including solar powered pump sets may be considered with adequate subsidy component.
- d. In order to ensure sustainable income to the farmers, the beneficiaries may be extended support for pursuing allied/supplementary activities through convergence of schemes like National Horticulture Mission(NHM), Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Rashtriya Krishi Vikas Yojane (RKVY), etc., implemented by other Departments like, Horticulture/Forestry, Rural Development & Panchayat Raj (RD&PR), Animal husbandry, Fisheries, etc.
- e. Crop planning may be advocated among the farmers to ensure proper utilization of water and high returns.
- f. To ensure optimum utilization of the harvested rain water stored in the farm pond cultivation of less water consuming but high income generating crops like, Millets, Coarse cereals, Oil seeds etc. may be encouraged. Farm models may be prepared and distributed to the identified beneficiaries.
- g. Considering the recurring droughts in the State and vast areas cultivated under rainfed conditions, it is recommended that all farm holdings may be supported establish Farm Ponds along with micro irrigation systems. As per the field study data, 31% of beneficiaries have not installed micro irrigation system. Hence, adoption of Micro irrigation system like Drip/Sprinkler may be made a compulsory component of the Government support to ensure optimum utilization of water.
- h. Replacement of Micro Irrigation Systems may be considered after 5 years.
- i. Wherever it is feasible more than one farm pond may also be considered for assistance as some of the farmers genuinely need the same.
- j. Construction of large size farm ponds than the prescribed sizes may also be encouraged depending upon the density of rain, preference and affordability by the farmers concerned. However, the subsidy component may be restricted depending upon the availability of funds.

ii. **Poly house**

Short term measure

- a. Insurance coverage for Poly Houses and Shade-nets may be ensured since the investment cost is high and farmers have availed bank loans.

Long term measure

- a. The Government may initiate steps to identify potential areas/districts and crops for propagation of poly houses across the State.
- b. Establishment of Poly houses/Shade nets may be encouraged on cluster basis.
- c. Since the subsidy element is high and that cultivation of high value & quality crops are being taken up, there is a need to organize them into a network like Farmers Producers Organisation.
- d. Creation of backward and forward linkages on a cluster basis would motivate more farmers to take up Poly house cultivation and to tap the available export potential. The GoK has been creating good storage facilities across the State. However, for Poly House farmers there is a need to consider establishing cold storage facilities for a cluster of Poly Houses. Similarly soil and water testing laboratories, quality testing for exports, etc. needs to be created. The concept of establishing Collection Centres for aggregation, grading, packing and transportation may be adopted.
- e. Geo tagging of poly houses established and securing details of various crops and quantity being cultivated may be made available on websites of Agriculture, Horticulture and agri-marketing Departments for improved marketing.
- f. For ensuring continuous supply & to fetch a good price for the Produce from Poly Houses, the Department may arrange buyer-seller meets at cluster level for better price realization by the farmers.
- g. The department may also prepare suitable model schemes with techno-economic parameters for different crops to facilitate flow of bank finance. The Department may organize field visits to bankers to create awareness on the Scheme and to extend financial assistance to farmers.
- h. State Government has formed District Regional Cooperative Organic Growers Federations to promote cultivation of Millets, Fruits and vegetables, Spices, etc. Farmers supported under Krishi Bhagya Yojane may also be brought under the umbrella of the Federations.

14. Evaluation reports of the University of Agricultural Sciences Bangalore, Dharwad and Shimoga

- Grow high-value vegetables and flower crops in poly houses/shade net fetching higher yield and income.
- It has helped in generating employment and thus preventing the migration of youths from the rural area
- Use of stored water through drip/sprinkler has led to increase in water use efficiency and area under irrigation.
- Adoption of the scheme has helped in improving the standard of living and socio-economic status of the farmers.
- Increase in value of the farm assets

15. Impact of Krishi Bhagya Scheme

- The fact that about more than one lakh farm ponds were constructed after KBS introduction is a commendable performance
- Cropping intensity and cropping pattern has been improved
- Further, the scheme emphasized on utilizing water effectively through micro irrigation facility to reap full benefits for crop production
- Krishi Bhagya Scheme has created additional employment during the offseason and promoted more enterprise combination
- Increase in socio economic condition of farmers

16. Constraints in implementing Krishi Bhagya Scheme

- Mainly large farmers are benefited.
- Lengthy procedure followed in availing benefits under the scheme.
- Poor co-operation of officials with the beneficiaries was another constraint.
- Delay in providing inputs.
- Delay in transfer of benefits.
- Lastly the quality of input supplied was found to be of poor quality.

17. Research studies

I. Performance assessment of Krishi Bhagya Scheme in North Eastern Karnataka region

- **Study area:** Kalaburagi and Ballari districts of North-Eastern Karnataka
- **Sample size:** 180
- **Sampling method:** Multi stage random sampling

Materials and Method

The present study confined to an Ex-post-facto research design. The study was purposively conducted in Kalaburagi and Ballari districts of North-Eastern Karnataka region during the year 2019-20 as these districts had highest number of beneficiaries in the *Krishi Bhagya Scheme* of Government of Karnataka. From each selected district, two taluks were selected based on highest number of beneficiaries. From each taluk 45 beneficiaries of *Krishi Bhagya Scheme* were selected by following simple random sampling procedure. Thus study comprise of 180 respondents.

Performance assessment of the respondents (component wise) of Krishi Bhagya Scheme

S. No.	Components of KBS	Performance			
		Before KBS		After KBS	
		F	%	F	%
1	Farm pond	2	1.11	180	100.0
2	Diesel Pumpset	23	12.78	157	87.22
3	Micro Irrigation	24	13.33	103	57.22
4	Protective Cultivation	0	0.00	17	9.44

Performance assessment of the respondents based on farm pond utilization component of Krishi Bhagya Scheme

Sl. No.	Components of KBS	Performance			
		Before KBS		After KBS	
		F	%	F	%
Farm pond utilization*					
1	Protective irrigation for crops	2	1.11	180	100.00
2	Raising of nursery seedlings	2	1.11	17	9.44
3	Store stream water / bore well water	2	1.11	62	34.44
4	Store water from run-of water	2	1.11	33	18.33
5	Recharge ground water	2	1.11	77	42.78
6	Drinking water facility for animals	2	1.11	52	28.89

Performance assessment of the respondents based on Diesel Pumpset utilization component of Krishi Bhagya Scheme

S. No.	Components of KBS	Performance			
		Before KBS		After KBS	
		F	%	F	%
Diesel Pumpset utilization*					
1	Water lifting from farm pond	2	1.11	178	98.89
2	Water lifting from stream water	4	2.22	39	21.67
3	Water lifting from open well	17	9.44	23	12.78

Results

- Component wise performance of the KBS beneficiaries. The components of *Krishi Bhagya Scheme* were farm pond, polythene sheet, diesel pump set, micro irrigation and protective cultivation.
- Farm pond is one of foremost basic component in this scheme. Only 1.11 per cent of the farmers had farm pond (without polythene sheet) before the implementation of *Krishi Bhagya Scheme*. While, cent per cent of them had farm pond after *Krishi Bhagya Scheme*. Among them 57.78 per cent had farm pond with polythene sheet and 42.22 per cent had farm pond without polythene sheet.

- The probable reason behind the polythene sheet is that, this component is not a mandatory for the farmers and also the Department had given polythene sheet based on the soil type, hence the result.
- In case of farm pond utilization pattern, the majority of the beneficiaries (after *Krishi Bhagya Scheme*) utilized farm pond for various purposes like provide protective irrigation for crops (100.00%), to recharge ground water (42.78%), to store stream water / bore well water (34.44%), provide drinking water facility for animals (28.89%), store water from run-off (18.33%) and raising of nursery seedlings (9.44%). But the utilization pattern is least (1.11%) in case of before *Krishi Bhagya Scheme* implementation. In case of diesel pump set, earlier (before *Krishi Bhagya Scheme*) the pump set is possessed by 12.78 per cent of the beneficiaries, whereas, after *Krishi Bhagya Scheme* implementation the per cent of diesel pump set possessed is increased to 87.22 per cent.
- In case of diesel pump set utilization pattern, large majority (98.89%) of the beneficiaries (after *Krishi Bhagya Scheme*) utilised for water lifting from farm pond followed by water lifting from stream water (21.67%) and water lifting from open well (12.78%). While, least per cent (9.44%, 2.22% and 1.11%) of them used for water lifting from open well, stream water and farm pond, respectively before *Krishi Bhagya Scheme* implementation.

II. Impact of Krishi Bhagya Yojana on Cropping Pattern and Irrigation Practices of Farmers in Kalyana Karnataka Region

- **Author:** M. Thimmesha *et al.*
- **Study area:** Bidar, Kalburgi and Yadgiri
- **Sample size:** 150
- **Sampling method:** Multi stage random sampling

Methodology

A multi stage random sampling method was adopted for the selection of sample farmers. In the first stage, Bidar, Kalaburgi and Yadgir district were selected as the study area, which was covered during the first phase of the Krishi Bhagya Yojana (KBY). In the

second phase, among the selected district, all the taluks i.e. Bidar, Basavakalyan, Humnabad, Aurad, Bhalki in the Bidar districts, Yadgir, Surapur and Shahpur in the Yadgir district and Kalaburgi, Chitapur, Aland, Jevargi, Chincholi, Afzalpur and Sedam in the Kalaburgi district were selected. Again among the selected taluks, one Raitha Samparka Kendra (RSK) was selected randomly. Again among the selected RSK's, four Krishi Honda beneficiaries and one shade net/ polyhouse beneficiary were selected randomly. So that each taluk having 5 beneficiary farmers and 5 non-beneficiary farmers are selected. The total sample size was 150, out of which 75 were beneficiaries and 75 were non-beneficiaries in the study area.

Both primary and secondary data were collected for the study. The secondary data pertains to the list of the beneficiaries of KBY from Department of Agriculture of different taluks in the study area. The primary data related to the agriculture year 2017-18 was elicited using pre-tested structured schedules. Tabular analysis was employed including percentages and averages in respect of socio-economic features of sample farmers, cropping system and irrigation practices

Impact of KBY on cropping system among the beneficiaries

Change in cropping system of the respondents gives a picture of the change in area under different crops before and after implementation of KBY. Change in cropping system in terms of area under crop was compared before and after the implementation of KBY.

The results presented in the table 2 depicts that percentage area under sugarcane increased from 41.80 to 41.93 per cent after implementation of KBY and tur decreased from 18.72 to 16.77, soyabean increased from 16.05 to 17.41 per cent, cotton increased from 15.05 to 15.48 per cent and paddy increased from 3.67 to 3.87 per cent. Where as in the inter cropping system, the area was decreased to 14.25 per cent.

Impact of KBY on the irrigation practice among the beneficiaries

The practice of usage of farm pond as a source of protective irrigation for cultivation of crops is presented in the table 3. It was observed from table 3 that there was considerable difference in the area under sugarcane before (125 acre) and after (130 acre)

the implementation of the KBY. In general, all farmers having Krishi Honda used to provide 5 to 6 irrigations in the month of March and April at the harvesting stage of sugarcane crop through furrow irrigation. After construction of Krishi Honda, due to increase in the water availability to the farms and it leads to increased area in sugarcane production.

It is noticed that area under tur, soyabean, cotton, sorghum cultivation increased due to construction of Krishi Honda (farm pond). In general, all tur, soyabean, cotton, sorghum cultivating farmers after the construction of Krishi Honda, water used as protective irrigation when there was no rains for longer period (more than 40 days), so that area was lower before KBY as compared to the after KBY. While Groundnut and chickpea cultivating farmers used Krishi Honda water during the rabi/summer whenever there was a need for the critical stages of the crop growth.

Some farmers before implementation of KBY, followed sprinkler method of irrigation to the crops includes tur, soyabean. Whereas after the implementation of KBY, farmers followed furrow method of irrigation due to availability of water in the Krishi Honda. The irrigated area of sugarcane extended from 125 to 130 acre by practicing furrow method of irrigation and also some of the crops used both sprinkler and furrow irrigation such as out of 56 acre of tur, 32 acre were sprinkler before KBY, whereas after the implementation of KBY the area extended up to 40 acre of sprinkler and 12 acre of furrow irrigation.

18. Conclusion

- The Government of Karnataka provided water harvesting structure (farm ponds) to dryland farmers under Krishi Bhagya Scheme with main focuses on securing farmers income by promoting on-farm rain water conservation practices and efficient use of water with higher productivity through modern agricultural technologies.
- Consequently, it helps to improve their rain water use efficiency, crop productivity and farm income especially in dryland areas. Apart from these, farmers can integrate different farming system with agriculture, horticulture, fisheries and dairy with view of enhancing on-farm and off-farm income in dryland areas.

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20. Discussion

1. Does government is funding the scheme at present?

No funding for Krishi Bhagya Scheme stopped in 2019.

2. Tarpaulin and drip are replaced whenever get damaged?

Tarpaulin and drip are provided only once under the scheme and they won't replace whenever damaged.

3. How income of beneficiary increased by adoption of Krishi Bhagya Scheme?

By storing water in farm pond more number of crops can be grown and more yield is obtained by cultivating crops in poly house it also fetches more price.

4. How many farmers are benefited under the scheme?

More than 3 lakh farmers are benefited under Krishi Bhagya Scheme



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Class : Sr. M.Sc.**

**Date : 23-09-2022
Time : 02:30pm
Venue: Dwarakinath Hall**

Seminar II

Krishi Bhagya Scheme: An Overview

Synopsis

A majority of the Indian population lives in villages and above 50 per cent of them rely directly or indirectly on agriculture. One of the greatest threats to farming is water scarcity. The annual rainfall of the country varies from 400 mm to 1200 mm, varying both in place and time. In the low to medium rainfall regions, the occurrence of high-intensity rainfall is very meager. Hence the rainwater management is necessary to increase water efficiency.

The Krishi Bhagya Scheme was implemented on 14th Feb. 2014 in five prime dryland zones covering 23 districts. The Government of Karnataka launched Krishi Bhagya Scheme exclusively for the dry-land farmers who rely on the annual rainfall for their farming. Since, a majority of the Karnataka's agricultural land over 70.00 per cent is under rainfed conditions, farming activities on the dry lands become challenging during erratic rainfall period. To ensure irrigation for sustainable agriculture, Krishi Bhagya Scheme was started. This scheme incorporates effective rainwater conservation measures to improve productivity.

With this back drop, the present seminar has been conceptualized with the following objectives:

1. To know the concept of Krishi Bhagya Scheme
2. To know the components of Krishi Bhagya Scheme
3. To review the related research studies

Krishi Bhagya scheme

Under the Krishi Bhagya Scheme, more emphasis is given to help farmers to take up water conservation measures such as constructing farm ponds in their agricultural land and saving every drop of rainwater for use during the dry spells to protect standing crops. The provisions availed under this Krishi Bhagya Scheme are that construction of climate-resilient technology for rainfed agriculture like farm ponds, sprinklers/drippers and motor pump is offered at a subsidized rate which has assisted the farmers in the harvesting of the excess rainwater on a farmer's field.

The primary purpose of the strategy is that harvested water in the farm ponds is being applied for providing life-saving protective irrigation for rain-fed crops through drip and sprinkler irrigation system, the polythene sheets are provided to prevent the percolation losses and shade nets for reducing evaporation losses of the water from the farm ponds. The various components of the Krishi Bhagya Scheme play a vital role in stabilizing crop production during the dry spells.

Components of Krishi Bhagya Scheme

Farm pond, polythene sheet, shade nets, diesel pumpset, sprinkler and drip irrigation

Expenditure pattern of Krishi Bhagya Scheme

Data illustrates that during 2014-15, 484.17 crores were released as subsidies to farmers under the Krishi Bhagya Scheme, and in 2015-16 nearly 347.56 crores were spent under the program. Whereas during the year 2016-17, 151.61 crores and in 2018-19 till the date 169.23 crores has been spent on the Krishi Bhagya Scheme in Karnataka (Karnataka State Budget, 2018-19).

Benefits of Krishi Bhagya scheme

This scheme helps in increasing farm productivity, infusion of new technology and equipment, sustainable agricultural practices, better water management and irrigation facilities. This scheme also helps to grow high value crops in the poly houses. Water harvested in the pond helps the farmers to protect the crops when there is scarcity of rains.

Major constraints in implementation of the KBS

One of the major problem was the issue with material suppliers and service providers, lengthy procedure followed in availing benefits under the scheme, poor co-operation of officials with the beneficiaries was another constraint, delay in providing inputs, delay in transfer of benefits, lastly the quality of input supplied was found to be of poor quality.

Research study

Timmesha *et al.* (2020) revealed that after implementation of KBY the cropping intensity was increased from 103.33 to 121.66 per cent. There was a substantial increase in area under irrigation farming after the implementation of Krishi Bhagya Yojana in the study area.

Gondali *et al.* (2022) reported that in Kalaburagi and Bellary districts of North-Eastern Karnataka region among various components of Krishi Bhagya scheme, only 1.11 per cent of the farmers had farm pond before the implementation of Krishi Bhagya scheme, while 1.11 per cent of them had farm pond after Krishi Bhagya scheme. Among Micro irrigation, it was practiced by 57.22 per cent and 13.33 per cent after and before Krishi Bhagya scheme. In case of protective cultivation, 9.44% and 1.67% of the respondents possessed shade net and poly house after Krishi Bhagya scheme.

Conclusion

The Government of Karnataka provided water harvesting structure (farm ponds) to dryland farmers under Krishi Bhagya Scheme with main focuses on securing farmers income by promoting on-farm rain waterconservation practices and efficient use of water with higher productivity through modern agricultural technologies. Consequently, it helps to improve their rain water use efficiency, crop productivity and farm income especially in dryland areas. Apart from these, farmers can integrate different farming system with agriculture, horticulture, fisheries and dairy with view of enhancing on-farm and off-farm income in drylandareas.

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