

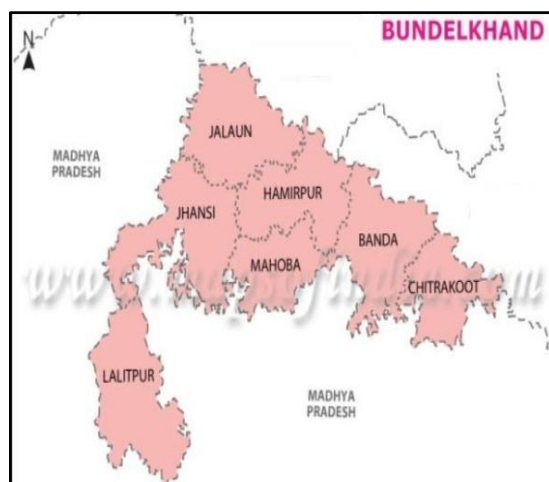
## 4-Scope of Organic Farming in Bundelkhand

(Finding Technological options from Geo-Similar regions of Country like Bundelkhand of Madhya Pradesh and Vidharbha of Maharashtra for Sustainable Development of Agriculture in Bundelkhand region of Uttar Pradesh)

-S.R. Kaushal, Director, U.P. State Seed Certification Agency, Lko.& Sujit Kumar, Scientific Officer, U.P.C.A.R.,Lko.

### Background

Seven Districts of Bundelkhand region of Uttar Pradesh, Six Districts of Bundelkhand region of Madhya Pradesh and Eleven Districts of Vidarbha region of Maharashtra having similarity in climate, rainfall, geography, agriculture etc. Economy of the farmers of these areas is based on agriculture. Earlier farming was based on traditional method in these regions. Traditional farming is conservative type of farming technique. Farmer used to conserve the crop seed for the next season. During that time farmers were completely dependant on natural environment. After growth in population traditional farming was not producing the crops needed to feed the total population. Green revolution forms a part of the “neo-colonial” system of agriculture where in agriculture was viewed as more of commercial sector than a subsistence one. After using high yielding variety of seed chemical and fertilizers, the production of crop has increased but the soil fertility has reduced with each crop and the quality of crop has started effecting the health in human and animals and has resulted in environment degradation. These new techniques, while beneficial in short term, had serious long term side effects such as soil compaction, erosion etc. Agriculture is predominant occupation in Bundelkhand. Land available and used for cultivation in the region is considerably lower than in other agriculture zones of the country. Due to rainfall pattern, most of the land is cultivated in Rabi Season.



Bundelkhand region faces unseasonal hailstorm and changing rain patterns extending to



longer dry spells directly affects the farming. Absence of adequate social support infrastructure at the village level, uncertainty of agricultural enterprise, indebtedness of farmers, rising cost of cultivation, plummeting prices of farm commodities, repeated crop failures, relative absence of irrigation facilities, lack of credit availability for small farmers weakens the farmers of Bundelkhand region.

**Table- A view of Bundelkhand Agriculture, Uttar Pradesh**

| S.N. | Districts    | Net Area Sown (Lakh Ha.) | Area Sown more than once (Lakh Ha.) | Cropping Intensity (%) | Net Irrigated Area (Lakh Ha.) | Normal rainfall in mm. (May to June) | Received Rainfall (May To June) (%) |         |
|------|--------------|--------------------------|-------------------------------------|------------------------|-------------------------------|--------------------------------------|-------------------------------------|---------|
|      |              |                          |                                     |                        |                               |                                      | 2017-18                             | 2018-19 |
| 1.   | Jhansi       | 3.12                     | 1.56                                | 149.9                  | 2.26                          | 879.1                                | 53.6                                | 90.08   |
| 2.   | Lalitpur     | 2.94                     | 1.60                                | 154.3                  | 2.11                          | 880.1                                | 76.3                                | 96.6    |
| 3.   | Jalaun       | 3.43                     | 1.14                                | 133.2                  | 2.61                          | 786.6                                | 45.2                                | 81.2    |
| 4.   | Hamirpur     | 2.59                     | 0.83                                | 131.9                  | 1.57                          | 850.7                                | 43.1                                | 99.4    |
| 5.   | Mahoba       | 1.85                     | 0.24                                | 113.0                  | 0.46                          | 850.7                                | 52.2                                | 37.1    |
| 6.   | Banda        | 3.19                     | 1.17                                | 136.5                  | 1.82                          | 945.5                                | 58.7                                | 83.2    |
| 7.   | Chitrakoot   | 1.58                     | 0.28                                | 118.0                  | 0.84                          | 940.0                                | 88.7                                | 91.3    |
|      | <b>Total</b> | 18.70                    | 6.82                                | 136.44                 | 11.67                         | -                                    | -                                   | -       |

### Organic Farming

Organic Agriculture refers to a farming system that enhances Soil fertility by maximizing the efficient use of local resources. Organic agriculture relies on a number of farming practices based on ecological cycles and aims at minimizing the environmental impact of the food production, preserving live long term sustainability of soil and maximum use of renewable resources. The Principal methods of Organic farming includes encourages crop diversity, polyculture, encourage beneficial organism in soil, crop rotation, companion crops, agricultural input production on own farms, animal husbandry, pest repelling plants, biological pesticides & herbicides, insect trap, physical barriers, water harvesting etc.



“Organic Agriculture is a production system that sustains the health of soils, ecosystem and people. It relies on ecological processes, biodiversity and cycles adopted to local conditions, rather than the use of inputs with adverse affects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.”



**International Federation of Organic Agriculture Movement (IFOAM).**

## Strategies for Organic Farming in Bundelkhand

The main strategies for Organic Farming in Bundelkhand are:-

- Awareness campaign and capacity building of farmers about Organic Farming.
- Model of Organic Farming that reduces the risks of agriculture production, promotes diversification and also use technologies that are more suitable to the extreme weather conditions in the region.
- Provide package of practices of Organic Farming to the farmers.
- Provide know-how about making of different
- Inputs on farming & availability of organic inputs to the farmers.
- Management & efficient use of water and local resources at farm.
- To make arrangement for processing, packing, branding & marketing of organic produce through organic outlets.
- Awareness and support for organic certification.
- Incentive for Organic Farming to farmers for strength & efficiency.



Climate Resilient, Resource Conserving and Sustainable

## Success Story

### **Progressive Organic Farmer: Prem Singh, Banda, Uttar Pradesh**



In the barren parched land of Bundelkhand lies Prem Singh's farm land who adopted traditional farming methods and got the key to success. Advocating for "Avartansheel Kheti" (Alternative way of farming) Prem Singh believes that farming has to be self sustaining occupation for the farmer. The idea is to ensure the Prosperity of farmer's family of Bundelkhand.

Organically managed soils have much higher water holding capacity, resulting much larger yields compared to conventional farming under condition of water scarcity.

## Multilayer Organic Farming: Akash Chaurasia, Sagar, Madhya Pradesh

Akash Chaurasia is a multiple award winning farmer from Sagar District in Madhya Pradesh, who is known for non-traditional farming techniques like Organic agriculture and multi-layer Farming.

With low cost and innovative farming techniques through multilayer cropping and other practices like uses of local available materials like bamboo & wild grasses to create a shade. This shade not only protects the crop from adverse weather but also helps in holding the vine crops.



Multilayer Cropping Model

| Crop          | Level                       |
|---------------|-----------------------------|
| Ginger        | Underground                 |
| Amaranthus    | Just Above the bed          |
| Scarlet gourd | Bamboo poles                |
| Papaya        | Planted at certain distance |

### Model Project Of Organic Farming

A standard model Project for Organic Farming is prepared for Bundelkhand region which will be helpful for adoption of organic farming.

(A unit of 100 Hectare)

| S.N.         | Activities                                                                                                                   | Proposed Cost (Rs. Lakhs.) | Tentative duration |
|--------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------|
| 1            | Awareness & capacity building of farmers                                                                                     | 2.50                       | 2 Years            |
| 2            | Management information system and data collection                                                                            | 3.00                       | 3 Years            |
| 3            | Management of natural Inhabitat, buffer zone, inputs, equipments, water management and other required infrastructure on farm | 50.00                      | 3 Years            |
| 4            | Support for organic registration                                                                                             | 1.75                       | 3 Years            |
| 5            | Support for residue analysis through NABL                                                                                    | 0.50                       | 3 Years            |
| 6            | Support for processing, value addition, packing, branding and infrastructure etc.                                            | 5.00                       | 2 Years            |
| 7            | Support for marketing outlets and Marketing initiatives                                                                      | 5.00                       | 3 Years            |
| 8            | Other Expenditure                                                                                                            | 2.25                       | 3 Years            |
| <b>Total</b> |                                                                                                                              | <b>70.00</b>               |                    |



## Indicators of Growth

The desired indicators for review of organic farming are classified on the basis of ecosystem, natural resources, farm input etc which will be helpful to monitor the development of organic farming:-

| S.N. | Indicator Category             | Indicator                                                                                                                                   |
|------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Ecosystem                      | Natural inhabitats                                                                                                                          |
| 2    | Natural Resources              | Soil fertility<br>Biological activity<br>Water availability                                                                                 |
| 3    | Farm input & output indicators | Nutrient use<br>Water efficiency<br>Pesticide use<br>Renewable energy use                                                                   |
| 4    | Societal indicators            | Animal Health<br>Social impact                                                                                                              |
| 5    | Quality of Produced food       | Residues Analysis                                                                                                                           |
| 6    | Impact indicators              | Land under Organic farming with certification<br>Total Organic Production<br>Marketing Volume<br>Per capita income<br>Employment generation |

## Conclusion

Organic Farming is an alternative farming system in Bundelkhand region for prosperity of farmers. Not only does Organic Farming builds healthy soil but it also helps combat serious soil, water and climatic change issues. Other comparing organic and chemically treated fields that the organic field featured more inches of top soil & moisture Conservation. According to Dr. Elaine Ingham, just one teaspoon of Compost-rich organic soil may host as many as 600 million to one billion helpful bacteria while soil treated with chemicals may carry as few as 100 helpful bacteria which is helpful for Soil health. On these grounds Organic Farming is more suitable for Bundelkhand farmers as it will eventually result in better socio-economic condition for them.

