

## Success Story of "Strengthening of Soil Testing Laboratory" under RKVY Madhya Pradesh

1. **Title:-**                 **Strengthening of Soil Testing Laboratory- The only means of maintaining Soil health.**
2. **Category:-**         **Agriculture**
3. **Background and Challenges:-**         During the year 2000 the department has started giving emphasis to balance and integrated use of fertilizer to maintain the soil health in the state. Soil Testing is the only tool to assess the fertility of the soil and the nutrient requirement for a crop / cropping sequence. This helps in economize the cost of fertilizer application and increasing the fertilizer use efficiency. Continuous soil testing and recommendation of balance and integrated use of fertilizer with natural and biological practices leads to improvement in soil health over a period of time .

Directorate of FW&AD has issued an administrative order vide number SS/2/11/99/22 dated 16th January 2001 to analyze soil samples for Nitrogen, Phosphorous, Potash, and Micro Nutrients and also to provide recommendation to the cultivators. To facilitate all districts for providing soil testing facilities department of FW&AD has again issued another administrative order vide number D-3/3/05/14-3 dated 24th January,2006 to shift 6 soil survey units as soil testing Lab as follows:-



**Soil Testing Lab, Ujjain**

<b>Shifted From</b>	<b>Shifted to</b>
Khandwa	Jhabua
Sagar	Damoh
Nowgeon, District Chhattarpur	Tikamgarh
Rewa	Sidhi
Hoshangabad	Betul



**Determination of available phosphorus**

In Madhya Pradesh there are over all 24 soil testing labs are in the department, Mandi Board has established 26 soil testing labs and one lab was in KVK. Distribution of soil health card to every farmers of the state is a challenging work which is not possible with the present number of labs in the state, therefore it has been decided at the GoMP level to establish one lab at each block HQ. There are 313 block in the state , therefore establishing

full-fledged lab at each destination was requiring huge funds. Therefore department has decided to create all facilities with new buildings using all resources like Mandi Board fund Departmental State funds and remaining from RKVY intervention.

4. **Initiatives:-** As mentioned above, the overall plan was made in a phased manner. Initially small projects were prepared and submitted to SLSC of RKVY and after getting the approval it has been implemented. The total projects prepared under RKVY for the Creating /strengthening of soil testing labs in the state are as follows:-

Rs in Lakhs

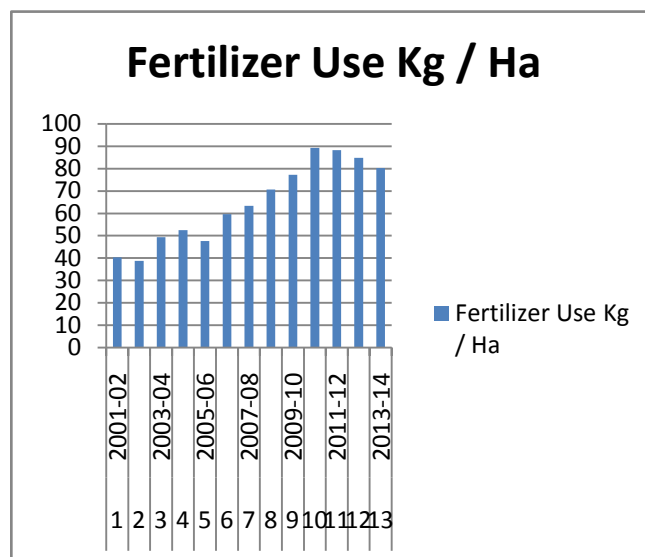
S.No	Date of SLSC	Cost of project	Expenditure	Work Done
1	12.12.2007	220.97	74.97	Strengthening of Jhabua, Damoh, Tikamgarh, Nawgeon district Chattarpur , Sidhi, and Betul Lab with new lab buildings, electricity, AC, Refrigerator, chemical & glassware etc
2	09.07.2009	337.28	311.18	Strengthening of all existing labs
3	12.05.2010	877.68	357.56	Installation of new equipments with replacement of old one like AAS, Electrical balance, Spectrophotometer, Flame photometer, pH & EC meter etc.
4	09.06.2012	665.00	570.70	Strengthening of all labs with Instruments, power backup, Furniture and water supply.
5	18.05.2015	53.10	53.10	Cost of training and soil testing in Mobile Soil Testing lab at Mandla District.
		2700.00	2700.00	Construction of 75 new soil testing lab buildings at block HQ.
6	23.02.2016	828.00	700.01	Strengthening of 46 Labs with AAS . 20 lab of department and 26 lab of Mandi Board
7	24.04.2017	156.50	0.00	ACs are to be installed in all 313 soil testing labs.
	<b>Total</b>	<b>5838.53</b>	<b>4767.52</b>	

50soil testing labs were already established in the state from department and Mandi Board together. 75 Labs were established from RKVY funds at block HQ. In remaining blocks the funds have been provided from Mandi Bopard.

5. **Key Result/ Insight / Interesting Facts:-** About 30 -35 years back there were 24 soil testing labs in the state. These labs were also only analyzing N,P,K pH and EC. As farmers were not much aware about maintaining soil fertility and the per Ha fertilizer consumption was also increasing season after season every year this was badly felt to increase the soil testing labs in the state. The trend of increasing fertilizer consumption up to 2013-14 is as given in the table below. Since last decade per Ha fertilizer use has been increased tremendously; therefore periodical soil testing became necessary. During the early days when only N, P, K, pH and EC were tested the average per lab about 4000 soil samples were tested. This way in 24 labs about 96000 soil samples were tested in a year. This capacity was too low to cope up with the requirement of balance fertilizer recommendation.

The scene of soil testing in the state rapidly changed due to RKVY intervention, because the existing labs were not only renovated but strengthened with latest new equipments , furniture, and materials. On the one hand new soil testing labs were constructed and equipped with all necessary equipments, apparatus and all basic facilities , but on the other hand this fact was overlooked that trained staff is reducing year after year by virtue of retirement. This has again created another problem which has started effecting the annual capacity of soil testing in the state.

S.No	Year	Fertilizer Use Kg/ha
1	2001-02	40.40
2	2002-03	38.80
3	2003-04	49.40
4	2004-05	52.50
5	2005-06	47.60
6	2006-07	59.60
7	2007-08	63.40
8	2008-09	70.70
9	2009-10	77.20
10	2010-11	89.20
11	2011-12	88.30
12	2012-13	84.80
13	2013-14	80.20



**6. Impact:-** During the year 2015-16 government of India has launched the scheme of distributing Soil Health Card to each farmer of the state. As there are approximately 88.73 lakh land holdings in the state , means this much of soil health cards are to be prepared and distributed. This was a challenging job looking to the number and capacity of present soil testing labs. State government has taken another decision to establish number of soil testing labs from Mandi funds. Presently there are 51 soil testing labs in all 51 districts. As all the labs are strengthened with respect to building, equipments, apparatus, furniture and materials, government has issued another order by virtue which now 12 major elements like N, P, K, pH, EC, Ca, Mg, Zn, Mn, Mol, S, and Fe are being tested in each of the soil samples. The capacity of each lab has also increased from 4000samples to average 13000 samples per year. The current average capacity of testing soil samples in the state is approximately 6.63 lakh. Looking to this capacity department has constructed 75 more labs from RKVY funds and 187 labs from Mandi funds so that every block HQ should have at least one soil testing lab. This will not only increase the testing capacity of the state but farmers will start getting testing results at block itself, which in present condition are served from the lab at district HQ. This will help the department to fulfill the aim of providing soil health card to each farmer of the state.

Due to facilitation from RKVY ,during the year 2015-16 and 2016-17 approximately 90.02 Lakh number of soil health cards have been distributed to the farmers. After completion of all additional lab buildings, this can be presumed that the system of providing soil health cards and maintaining them will be done on sustained basis.

**7. Lesson Learnt:-** As it can be seen from the table given in the chapter of initiation that projects at serial number 1 to 4, 6 and 7 are not implemented as it was designed. The reason behind this was the biggest lesson learnt from the implementation of these projects. It has been observed that while preparing the projects, it should have been thought that who will do what and what are the power of various officers for procurement of equipments and furniture. The items for which sanctions are to be accorded from state finance department are extremely time consuming process, as it is tough to deal with finance department. The items foe which the sanctions are to be issued at departmental level is easy to procure. When it is a well known fact, than phasing of cost as per its components should have been incorporated in the project accordingly.

**8. Supporting Quotes and Images:-**

- 9. Additional Information:-** The address of the contact person who is responsible for the implementation of this sector is as given below:-

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