Evaluation of Saumic Suvrushti Project in Madhya Pradesh

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In the summer of 1950, when the first President of India Dr Babu Rajendra Prasad came to "Panchmadhi" in Madhya Pradesh, the primary teacher of the school presented his research paper on "Twelve *Jyotirlingas*". *Jyotirlingas* are originally "Holy Fire Places", which are supposed to be the centers that attract and accelerate the monsoon cycle in *Bharat Khand*. The Vedas recommend the uncommon remedy of "*Somayajna*" to overcome some natural disasters. The Saumic Suvrushti Project was initiated in 2005 at Shri Yogiraj Ved Vijnan Ashram, Barshi, Maharashtra with support from Anand Agricultural University (AAU), Anand, Gujarat, India. In 2006 *somayajnas* were conducted at 16 places consisting of 12 *Jyotirlinga* places and 4 other places in India to balance the seasons and for timely and sufficient monsoon rains (Varshneya *et al.*, 2010a).

Somayajna performance in Madhya Pradesh

Shri Yogiraj Ved Vijnan Ashram, Barshi was invited by the Government of Madhya Pradesh in February 2008 to carry out *somayajna* in 10 districts in the state particularly in Bundelkhand area. This area was facing drought like situation since

last three years. Hon'ble Chief Minister of Madhya Pradesh Ma. Shivrajsinghji Chauhan made *sankalpa* of these 10 *somayajnas* at Bhopal on 4 February 2008. With the continued support of the Hon'ble Chief Minister of Madhya Pradesh, the *somayajnas* were carried out at 11 districts in 2009 and 10 districts in 2010. So, in total 31 *somayajnas* were performed during 2008 to 2010. In total, 19 districts of Madhya Pradesh were covered under *somayajna* performance during this period. The district of Khargone was covered for all three years for performance of five *somayajnas* whereas 7 districts were covered for two years, while 11 districts were covered only once in the three-year period of *somayajna* performance during 2008–10.

Validation of total rainfall (June to October) in *somayajna* districts

During 2007, the state of Madhya Pradesh recorded deficit seasonal rainfall of −26.7%. In 2008, *somayajnas* were performed in 10 districts with total rainfall during June to October showing +2% deviation from normal whereas the state had −19% deficit (Table 1). In 2009, *somayajnas* were performed in 11 districts and rainfall

Table 1. Rainfall during June to October in *somayajna* districts of Madhya Pradesh.

Year	Actual rainfall (mm)	Normal rainfall (mm)	% Deviation for *somayajna* districts	% Deviation for the state
2008	926.7	908.7	+ 2.0	−19.0
2009	827.3	903.4	−8.4	−30.0
2010	733.7	1000.5	−26.0	−16.0
Mean	829.2	937.5	−11.6	−21.7

showed −8.4% deficit, while the state as a whole showed −30% deficit. In 2010, the state had rainfall at −16% deficit while *somayajna* districts (10 places) showed −26% deficit. On an average over the period of three years, viz., 2008–10, *somayajna* districts showed −11.6% deficit, whereas the state average deficit was −21.7%. This indicated that *somayajna* districts improved in rainfall condition (reducing deficit) by 10.1% over Madhya Pradesh state as a whole.

Nakshatra-wise rainfall distribution in *somayajna* districts

In 2008 the *nakshatra*-wise average rainfall of 10 districts indicates that from *Mruga* (7–20 June) to *Uttara* (13–25 September), the rainfall was well distributed and in each *nakshatra*, rainfall ranged between 67.6 mm (*Purva*) to 153.5 mm (*Punarvasu*) (Table 2). The total rainfall during 2008

was 799.2 mm (average of 10 districts). Thus distribution was considered good for agriculture. In 2009 the rainfall was well distributed from *Ardra* (21 June to 4 July) to *Hasta* (26 September to 9 October) except in *Uttara nakshatra* indicating more than 70 mm average rainfall in each *nakshatra*. For *rabi* season in *Vishakha* (5–18 November) *nakshatra* 51.1 mm rainfall was recorded. The total rainfall was 858.7 mm (from *Murga* to *Anuradha nakshatra*) for 11 districts during 2009. In 2010 rainfall from *Ardra* to *Uttara* was well distributed with more than 45 mm rainfall in each *nakshatra*. Total rainfall was 774.1 mm. For *rabi* season, light to medium rainfall during *Vishakha* (25.4 mm) and *Anuradha* (12 mm) *nakshatras* was observed.

There are around 13–14 days in each *nakshatra*. If we consider 2.5 mm for each day as a rainy day, then for one *nakshatra*

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Table 2. *Nakshatra*-wise average rainfall (mm) for 2008 to 2010 in districts of *somayajna* performance.

Nakshatra	2008	2009	2010
Mruga (7 to 20 June)	139.0	6.6	16.1
Ardra (21 June to 4 July)	108.0	78.7	61.8
Punarvasu (5 July to 18 July)	153.5	131.6	88.4
Pushya (19 July to 1 August)	138.2	136.0	165.2
Ashlesha (2 to 15 August)	128.7	78.5	128.1
Magha (16 to 29 August)	83.8	116.6	101.1
Purva (30 August to 12 September)	67.6	152.4	127.3
Uttara (13 to 25 September)	84.3	–	47.2
Hasta (26 September to 9 October)	7.8	111.7	–
Chitra (10 to 20 October)	–	–	–
Swati (23 October to 6 November)	–	–	–
Vishakha (5 to 18 November)	–	51.1	25.4
Anuradha (19 to 30 November)	6.8	–	12.0
Total (*Mruga* to *Anuradha*)	799.2	858.7	774.1

the total rainfall is 35 mm, which is good for agriculture. Using this value as a threshold value, number of *nakshatras* with more than 35 mm rainfall was counted. The average number of *nakshatras* with more than total rainfall of 35 mm was 6.3 in 2008, 6.5 in 2009, and 6.7 in 2010.

Validation of rainfall spells predicted based on rainfall conception

Based on rainfall conception signs (Varshneya *et al.,* 2009, 2010b) observed during *somyajna* performance, the rainy spells were predicted for the period 192 days after rainfall conception signs for that district. These spells were validated with actual spells observed during monsoon season. The validation revealed that out of total 31 spells predicted based on rainfall conception signs over three years, 22 spells of rainfall actually occurred after 192 days in the respective *somayajna* districts, indicating 71.5% accuracy of rainfall prediction based on Rain Conception and Rain Delivery (RCRD) theory (Table 3).

> *In 2008 the* **nakshatra-*wise average rainfall of 10 districts indicates that from* Mruga *(7–20 June) to* Uttara *(13–25 September), the rainfall was well distributed and in each nakshatra, rainfall ranged between 67.6 mm* (Purva) *to 153.5 mm* (Punarvasu).**

Table 3. Validation of rainy spells predicted based on rainfall conception observation during *somayajna* performance.

Year	No. of rainy spells predicted	No. of spells observed	Skill score (%)
2008	10	7	70.0
2009	11	6	54.6
2010	10	9	90.0
Total	31	22	71.5

Future thrust or suggestions

1. *Somayajnas* should be performed at places with the following criteria:

- The location should be a *Jyotirlinga* place. From the study undertaken during 2005–06, all *Jyotirlinga* places (12) and other 4 places gave significantly good results; so *somayajnas* should be continued further, covering *Jyotirlinga* places at least for five years continuously.

- The place selected may be the origin point of a river or on the bank of the river.

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- The place selected may be continued for at least 5 years for studying the rainfall pattern.

2. The data on crop sown and production of all important *kharif* and *rabi* crops in the districts should be made available for impact study.

3. A long-term project may be prepared and sponsored to undertake detailed evaluation of *somayajna* performance.

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