Soyabean - Malwa Region of Madhya Pradesh

What is the issue?

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- Malwa region is said to be India’s US Midwest, only because of soyabean.
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- The significance of this crop in Malwa region and Madhya Pradesh, calls for addressing the current challenges to its production.
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How did Soyabean take root in India?

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- Soyabean in India has an American connection. The leguminous oilseed was hardly grown here till the mid-sixties.
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- The first yellow-seeded soyabean varieties were introduced by University of Illinois scientists.
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- They conducted field trials at the Jawaharlal Nehru Krishi Vishwa Vidyalaya (JNKVV) in Jabalpur, Madhya Pradesh.
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- Many of these varieties - Bragg, Improved Pelican, Clark 63, Lee and Hardee - were released for direct cultivation.
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- By 1975-76, the all-India area under soyabean had touched around 90,000 hectares.
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- But a revolution in soyabean production took place only after that and in Malwa.
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- Here, soyabean’s relevance, even vis-à-vis shaping electoral outcomes, is comparable to that of sugarcane in western UP.
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How has Malwa plateau traditionally been?

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- Malwa plateau region of western MP covers the districts of Dewas, Indore, Dhar, Ujjain, Jhabua, Ratlam, Mandasur, Neemuch, Shajapur and Rajgarh.
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- Traditionally, the region grew only a single un-irrigated crop of wheat or chana (chickpea) during the rabi winter season.
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- Farmers mostly kept their lands fallow during the kharif monsoon season.
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- The reason was the monsoon’s unpredictability, as even if the rains arrived on time, it could be followed by long dry spells.
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- Sometimes, it rained so much that the fields would get waterlogged, damaging the standing crop.
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- So the farmers simply allowed the soil to retain water from the monsoon rain and take a rabi crop using this residual moisture.
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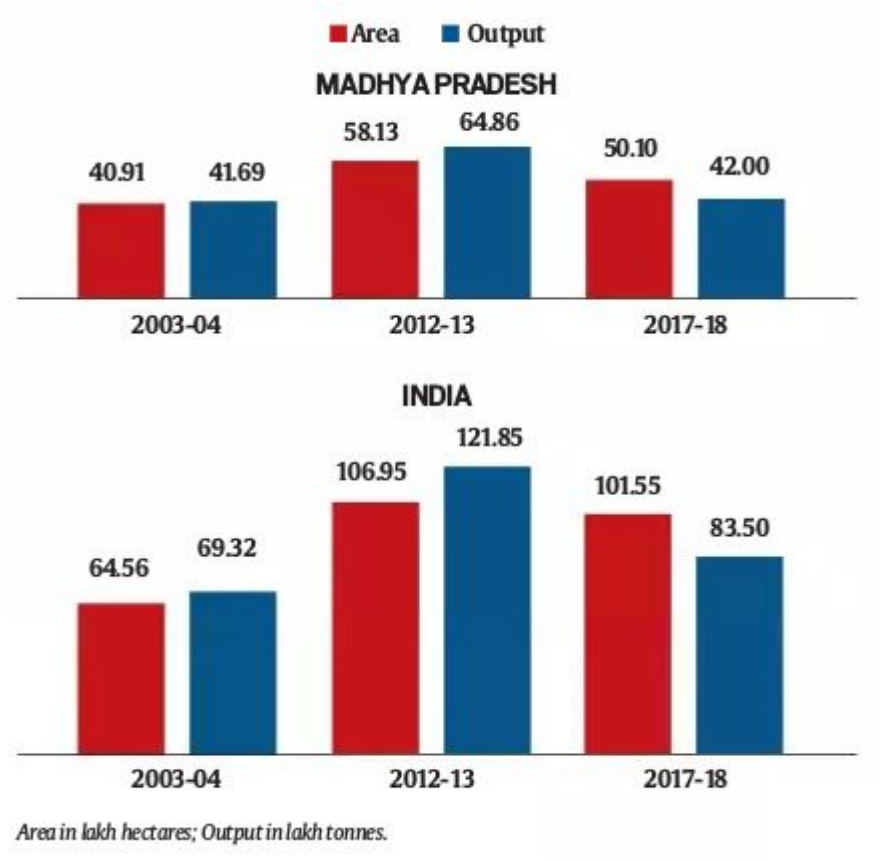
How did Soyabean become suitable to Malwa?

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- **Tubewells** - The change came with the advent of tube-wells in the mid-seventies.
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- The Malwa plateau is made up of hard basaltic rocks of the Deccan Trap.
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- Since these had aquifers with unutilised groundwater in many places, it was possible to drill tube-wells and grow irrigated wheat.
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- So farmers now felt no need to conserve rainwater during monsoon as before.
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- They could, instead, raise a kharif crop on this previously fallow land, and this turned out to be soyabean.
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- **Soil** - Soyabean could grow well in Malwa region’s black cotton soil and did not require much effort.
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- **Water** - Soyabean, unlike urad (black gram) or maize, could tolerate water-logging for 2-3 days.
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- It could also survive dry spells for over three weeks without much yield loss.
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- **Nitrogen** - Being a legume, soyabean root nodules harboured atmospheric nitrogen-fixing bacteria.
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- When harvested, it left behind 40-45 kg of nitrogen per hectare (equivalent to nearly two 50-kg urea bags) for the succeeding crop.
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- **Duration** - Soyabean's main advantage was its duration.
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- The strains imported from US Midwest had a maturity period of 115-120 days from seed to grain.
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- In 1994, JNKVV released an indigenously bred variety, JS 335 that matured in just 95-100 days.
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- It also yielded 25-30 quintals per hectare, which was 5-10 quintals more.
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- This variety, thus, very soon went on to occupy around 90% of India's total soyabean area.
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- The crop duration fell further to 80-90 days with varieties like JS 9560 and JS 2034, developed by the same university.
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- The relative hardiness and shorter maturity (at least 10-15 days less than jowar or maize) made soyabean the ideal kharif crop.
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- Farmers could sow it by late-June after the monsoon rains and harvest before mid-October, and could plant wheat in November.
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- **Coverage** - Soyabean-wheat became the dominant crop cycle in Malwa region as in the US Midwest or paddy-wheat as in Punjab and Haryana.
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- By 1979-80, the country's soyabean area had reached 0.5 million hectares.
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- It rose further and was 6 mh towards the end of the century, with Madhya Pradesh accounting for 70%.
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- Within MP, soyabean cultivation spread to other districts as well, especially in the neighbouring Vindhya plateau.
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What is the commercial potential of Soyabean?

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- Soyabean’s potential was to an extent derived from sale of its oil domestically.
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- But Soyabean had only 18-20% oil content, as against 40-45% in mustard or groundnut.
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- So the real money lay in the balance 80-82% de-oiled cake and extractions, also called meal.
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- The protein-rich meal could be exported out, especially to South-East/East Asia where it was used as an ingredient for animal feed.
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- Realising the potential, business people started setting up solvent extraction plants for processing soyabean.
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- From the mid-2000s, value of soya-meal shipments from India soared from just over Rs 1,360 crore to almost Rs 14,500 crore.

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What is the recent challenge?

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- **Production** - The boom in Soyabean production collapsed after 2013-14, along with a crash in global agri-commodity prices.
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- Soya-meal exports and Soyabean realisations fell sharply.
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- The crisis is not just economic, but ecological too.
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- **Water** - The soyabean-wheat crop cycle has led to groundwater overexploitation, more so in Malwa.
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- There is now need for digging wells deeper and deeper, as the top aquifers have been exhausted.
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- **Pest** - Moreover, soyabean itself has over the years become prone to pest and disease attack.
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- Yellow mosaic virus, once a problem confined to Northwest India, has now come even to soyabean in Central India.
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- There are also fungal diseases such as collar rot, rhizoctonia root rot and pod blight.
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- The pests that are increasingly causing crop damage include
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i. white fly (carrier of yellow mosaic virus)
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ii. stem fly (whose larva feeds on the inner part of the stem, making it hollow)
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iii. girdle beetle
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iv. tobacco caterpillar
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- **Cultivation** - The main reason for pest and disease susceptibility is the absence of crop rotation and growing the same variety year after year.
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- It is now for the policy-makers to address the production issues with this key crop grown in Madhya Pradesh.
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Source: Indian Express

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