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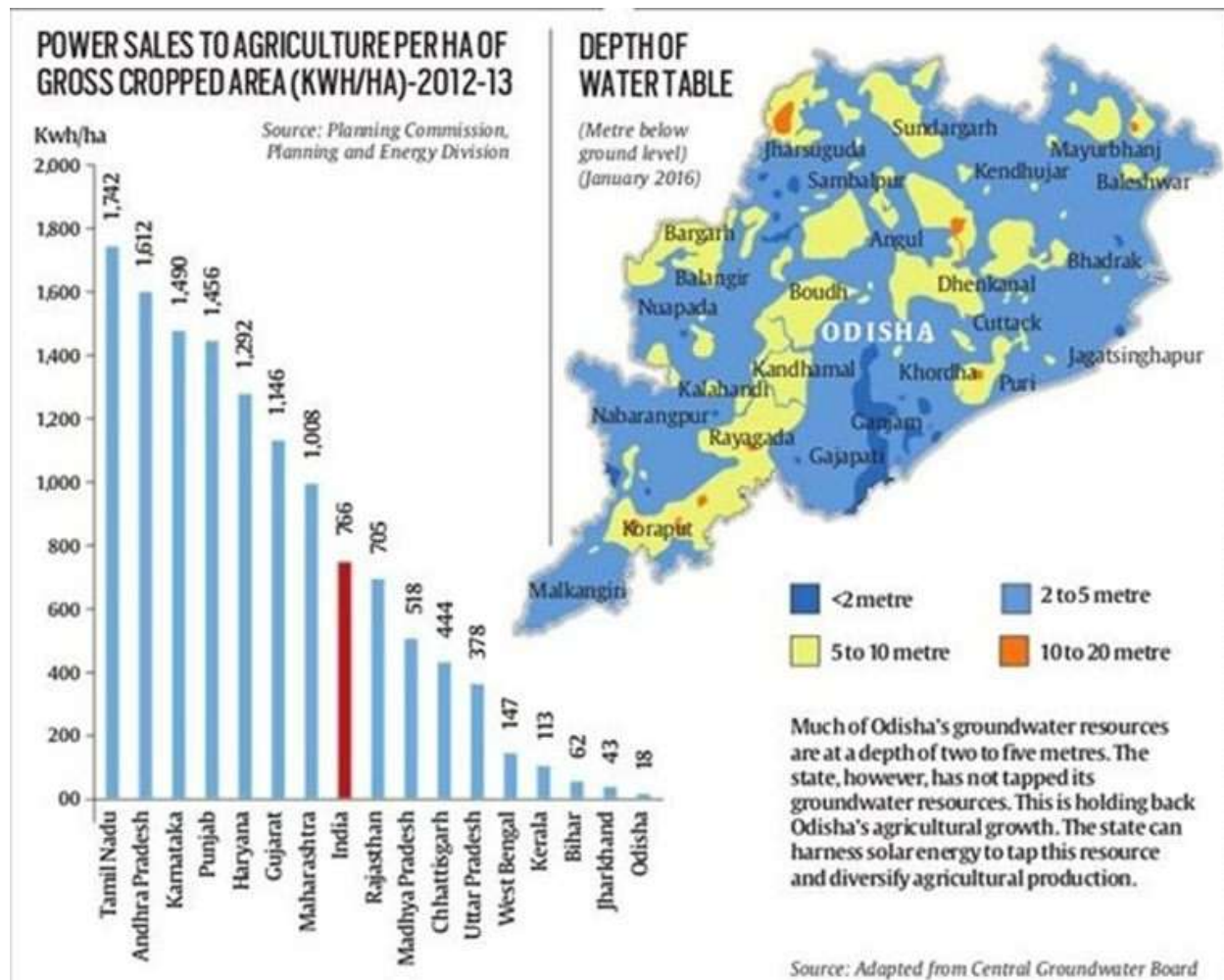


From plate to plough: Some Punjab lessons for Odisha

The slogan of 'Make in Odisha' is being raised, Bhubaneswar is going to be a smart city. But first the state must explore ways of raising its farm productivity.



Odisha is one of the rare states that has enjoyed a long period of political stability and continuity in economic policies since March 2000, when Naveen Patnaik took over as chief minister for the first time. The state is also blessed with abundant natural resources, especially minerals, forests and groundwater. Given all this, Odisha should have been one of the richer states of India. But Odisha's per capita income is the fifth lowest in the country and poverty the sixth highest amongst various states of India.



Odisha's per capita income — Rs 24,928 in fiscal year (FY) 2014 — was about 62 per cent of the all-India average — Rs 39,904 in FY14. Although it is much better in this respect compared to Bihar (Rs 15,506) and Uttar Pradesh (Rs 19,233), Odisha remains way below the top-performing states like Sikkim (Rs 83,527), Maharashtra (Rs 69,097), Haryana (Rs 67,260) and Gujarat (Rs 63,168). One-third of Odisha's population is poor. To put things in perspective, 22 per cent of the country's population is below the poverty line; just seven per cent of Kerala's population is below the poverty line, eight per cent of the population in Sikkim and Punjab is below the poverty line, 11 per cent of Haryana's and 16 per cent of Gujarat's population is below the poverty line (the figures are from 2011-2012, as per the erstwhile Planning Commission estimates based on the Tendulkar poverty line).

In its quest to industrialise fast, Odisha is hosting a mega event, "Make in Odisha Conclave", at the end of this month. Bhubaneswar, the state's capital, tops the list of 20 smart cities to be developed under the Union government's 100 smart cities programme. These are laudable initiatives. But the case of Dana Majhi, who was forced by poverty to carry his wife's dead body on his shoulders for 12 km, raises an important question: What is the best and fastest way to eliminate poverty?

Our research at ICRIER reveals that higher productivity and income in agriculture may still hold the key for faster poverty alleviation. This is particularly so since 91 per cent of poverty in Odisha is rural, and more than 60 per cent of its workforce is engaged in agriculture. But unfortunately, between 2010-2011 and 2014-2015, Odisha's agri-GDP recorded an annual average growth of a mere 0.9 per cent. Compare this with a 14.2 per cent agri-GDP growth in Madhya Pradesh and a 7.1 per cent agri-GDP growth in Bihar. Odisha's productivity with respect to its main crop, rice, is less than two mt/ha (metric tonnes per hectare). Punjab's rice productivity is four mt/ha, Haryana's 3.2mt/ha and Andhra Pradesh's four mt/ha. Low rice productivity in Odisha is surely discomfiting.

So, how can one turn around Odisha's agriculture and alleviate rural poverty faster?

First the state should gain better control over water resources, especially those pertaining to irrigation. About 39 per cent of Odisha's gross cropped area is irrigated (compared to the all India average of 48 per cent, and above 95 per cent in the Punjab-Haryana belt). Odisha has a large (70 per cent) untapped groundwater potential and about 50 per cent untapped potential from major and medium irrigation schemes. While this is holding back the state's agri-growth, some strategic interventions can turn things around. Luckily, much of Odisha's groundwater reserves are at a depth of just two to five metres (see map), which can be tapped economically if adequate power supply is provided to the agriculture sector.

Unfortunately, Odisha provides only 1.3 per cent of its total power supply to agriculture, which means agriculture gets less than 20kwh/ha. Compare this to 766 kwh/ha at all India level, 1,742 kwh/ha in Tamil Nadu and 1456kwh/ha in Punjab (see graph) This reflects gross neglect of agriculture. Such a situation typically arises when supplying power to agriculture through grid increases the losses of discoms as power tariffs for agriculture are generally zero or power is provided to agriculture at highly subsidised rates. Diesel is too expensive for farmers. The solution could lie in large scale installation of solar irrigation pumps, which can supply power at Rs 4.5 to Rs 6 /kwh.

Odisha receives solar radiation of around 5.5 kwh/sq mtr and 300 days of sunny days. Solar power in rural areas can also help build value chains, including cold storages for high-value agriculture, especially, fruits and vegetable cultivation and milk production — areas where Odisha has done relatively better.

Secondly, Odisha must focus on paved roads. Roads provide linkages to output and input markets, increase labour mobility, and give good returns to farmers. As per Odisha's Economic Survey (2014-15), surfaced roads as a percentage of total road length in Odisha remained in the range of 20-30 per cent, compared to almost 90 per cent in Gujarat, Punjab and Haryana. In fact, almost 46 per cent of villages in Odisha do not have all weather road connectivity. This prevents farmers from getting the best price for their produce and inputs.

Thirdly, the state should incentivise diversification of agriculture towards high value products such as livestock and fruits and vegetables. It should promote well- coordinated value chains for such products — the AMUL model in milk production and the Venkateswera/Suguna hatcheries model in poultry are good examples.

Just these three interventions, tapping groundwater irrigation through solar power, providing paved roads, and incentivising diversification toward high-value agriculture, can bring rich dividends and alleviate poverty in Odisha much faster. Incidentally, our research also shows that in Punjab, during the Green Revolution's heydays (1970-1985), irrigation, roads and procurement system played a pivotal role in propelling agri-growth and reducing poverty. Odisha will be better off if it keeps these lessons in mind. In fact, it can lead a second Green Revolution — this time from the east, as Prime Minister Narendra Modi said during his visit to Odisha early this year.

Biodiversity conservation laws should not hamper agriculture, asserts PM Modi

Expressing concern over extinction of genetic resources, the Prime Minister called for national, international, private bodies and experts to work together and prepare a shared vision for conservation of agro-biodiversity.



Laws on conservation of agro-biodiversity should not hamper growth of agriculture in developing nations like India, Prime Minister Narendra Modi on Sunday said, while asserting that use of technologies for crop enhancement must not be at the cost of sustainable development. Addressing the first ever International Agro-biodiversity Congress in the national capital, Modi cautioned against growing threat to plant and animal species and said there is a need to adopt a “shared vision” for conserving them through focused research and proper management of genetic resources.

“World over, crores of poor people are fighting hunger, malnutrition and poverty. To address these issues, science and technology is very important. While finding solution to these problems, we should not ignore sustainable development and conservation of

biodiversity,” Modi said at the conference attended by about 900 delegates from 60 countries.

There is a need to assess the negative impact of use of the technology in agriculture, he said, citing the example of pesticide usage affecting honeybee in pollination process. In lighter vein, he also mentioned that technology’s negative impact on people was such that they do not remember their own telephone numbers after the introduction of mobiles.

“So, we need to be alert on how application of technology in agriculture is bringing changes,” he said. Terming pesticides as a major concern in agri ecosystem, Modi said, “The use of pesticide not only kills pests but also those insects necessary for entire ecosystem. Therefore, there is a need to audit development of Science. In the absence of audit, the world is facing various challenges.”

Expressing concern over extinction of genetic resources, the Prime Minister called for national, international, private bodies and experts to work together and prepare a shared vision for conservation of agro-biodiversity. “We will also have to see how various rules related to agro-biodiversity can be harmonised so that these laws do not come in the way of development of agriculture and farmers.” He said about 50-150 species are getting extinct every day despite adoption of the recommendations of the 1992 biological diversity convention. “In the coming years, there is threat of extinction of one out of eight birds and one fourth of animals. We will have to change our thinking.”

“People have exploited natural resources blindly in the name of development. As a result, challenges are going to grow in the coming days. In the current scenario, discussion and research on agro-biodiversity are very important for achieving global food, nutrition, health and environment security.”

Stating that the problem of climate change has been due to imbalance in nature, Modi said, “In view of global warming threat, we have ratified Paris agreement on October 2. India is playing a leading role.”

Stating that each nation is adopting a different way to protect agro-biodiversity, Modi said, “It would be appropriate if we prepare a register to keep a record of all such practices and then do research to find out which practices need to be promoted.” He added that biodiversity conservation should be more a matter of individual consciousness than rules and regulation.

Elaborating on the richness of India’s biodiversity, Modi said there are more than 47,000 plant species and over 89,000 animal species besides over 8,100 km of coastal areas. India has been able to protect genetic resources as ancestors linked agri-produce with culture. The country has been able to conserve many varieties including ‘Konamani’ rice variety in South India, ‘Agnibora’ in Assam, ‘Bhalia’ wheat in Gujarat, he added.

India has also helped other nations in conserving agro-biodiversity, Modi said, noting that Haryana’s buffalo breed ‘Murah’ and Gujarat’s ‘Zafrabadi’ are known as international trans-boundary breeds. However, he pointed out that the country has been able to register only 160 animal species and urged to focus on research in this area to identify more species.

Emphasising on widening the scope of research for value-addition on the strength of biodiversity, Modi mentioned how a high nutritional grass variety ‘Banni’ in Gujarat was

helping in increasing milk production. “Through value addition in the characteristic of this grass, we can promote this grass in the country. We need to expand the scope of research for this,” he said, adding that value-addition can be done in castor, millets and mushroom.

He made it clear however that there should not be any damage to species while doing value addition. “Human beings have created a problem of climate change by interfering in the nature. Rise in temperature is affecting life cycle of plants and animals. As per one estimate, 16 per cent of wild species will be on the verge of extinction by 2050. This situation is a cause of concern,” he said.

Stating that agro-biodiversity management is a priority for all nations, Modi stressed on conserving genetic resources in gene banks and making it available for farmers. “We need to create such a mechanism so that our farmers are able to analyse desirable genes in their farm fields and for which they should get good price. Such farmers should be involved in research work,” he said.

Modi also called for blue revolution and asked scientists to focus not only on fisheries but also on sea weeds farming.

Maharashtra to bring 40 lakh more hectares under irrigation



THE Maharashtra government has drawn plans to bring additional 40 lakh hectares of land under irrigation, availing 83.3 per cent of the water storage in 3,037 dams across the state. The ambitious target aims to enhance the state’s irrigation potential, which has remained stagnant at 18 per cent for the last 15 years. The target for 2016-17 is being backed with the Vision Document and policy reforms in water management and changes

in the crop pattern. Highly placed sources in the Ministry of Water Resources said the highest record of maximum land under irrigation in one year was 32 lakh hectares in the year 2005. “We can easily bring additional 40 lakh hectares under the command area of irrigation if our plans are properly implemented,” said a source.

It has been decided to make water meters compulsory to regulate the use of water drawn from dams for commercial use. Any civic body found violating the norms and lifting water above the given quota from dams for commercial purposes would be slapped high penalty — up to one and a half times more than the water tariff per unit.

A study has shown that water quota for commercial purpose has been regularly violated, with illegal lifting of water from dams and diversion from the quota allocated for the purpose of drinking and agriculture becoming “a regular phenomenon”. A senior officer said, “The metering of dam water would help in curtailing water wastage up to 30 per cent. It would also help generate higher revenue from the existing Rs 650 crore to Rs 1,400 crore annually.”

Chief Minister Devendra Fadnavis has urged the Ministry of Water Resources and the Ministry of Agriculture to prepare a roadmap complete with water availability and crop patterns. The mammoth exercise is part of the policy decision to shift from rain-fed agriculture to water management agriculture. The thrust on crop pattern is to ensure farmers don't go for sugarcane cultivation citing plenty of water in the dams and reservoirs, leading to crises in summers.

Along with making drip irrigation mandatory for high water-intensive crops like sugarcane, the crop rotation will also be planned region wise following a water audit. Focus is also on minimising the water losses from dams due to poor maintenance of canals and water structures, including missing gates at Kolhapuri-type weirs (bridge-cum-barrages).

“Time has come to treat the water as essential commodity. After four years of consecutive drought, Maharashtra has received abundant rains. We have to encash the good monsoons to bring prosperity to farmers across the state,” Fadnavis has said in meetings with ministry officials. Water Resources Minister Girish Mahajan has convened a series of meetings between November 8 and 15.

Of the 96 mega projects divided over four sections with command area of more than 1 lakh hectares, all medium projects and those on less than 1 lakh hectares would be personally reviewed by the minister. The water resources department's demand for higher allocation of funds for irrigation infrastructure and maintenance of the existing structures are also under consideration of the finance ministry.

Thailand: Rice committee announces loan schemes for rice storage to help farmers

Thailand's rice committee announced new loan schemes for storage of white paddy and Pathum Thani fragrant rice on Monday to help rice farmers struggling with falling prices. Farmers will receive 15,000 baht (\$428.33) for every tonne of white paddy stored. Farmers who store Thai Pathum Thani fragrant rice will receive 11,300 baht (\$322.67) per tonne.

The committee has yet to announce the overall budget for the new schemes.

Thailand's politically powerful rice farmers are becoming the new battleground between the ruling junta and the opposition, with both trying to woo their support amid concerns of a flashpoint ahead of 2017 elections.

Business standard

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Use technology in agriculture, but be mindful of bio-diversity: Modi



Prime Minister Narendra Modi said on Sunday that while the agriculture sector should use technology to fight malnutrition and hunger, it should not be at the cost of sustainability and compromising the country's bio-diversity.

Addressing the International Agrobiodiversity Congress here on Sunday, Modi said the world community needs to develop a system where all rules related to agro-biodiversity is harmonised. He also called upon the scientists from the Indian Council of Agriculture Research and others to expand the ambit of their research so that plant and animal varieties, which are helpful to farmers, could be publicised across the country.

“Despite most countries accepting the international bio-diversity convention, almost 50-150 species of plants, animal and marine resources are getting extinct every day,” Modi noted.

Recently, a panel under the Genetic Engineering and Appraisal Committee had given a favourable ruling on GM mustard, opening the door for its commercialisation in the country.

The move has sparked intense debate within the country with right-wing organisations such as the Swadeshi Jagran Manch along with prominent civil society organisations criticising the approval.

One major argument of these organisations is that once GM mustard is commercialised, it will lead to wiping off all indigenous mustard varieties. The honey bee industry has also opposed GM mustard on the ground that it would kill honeybees and also the livelihood of millions of growers as mustard is a main crop for bees.

Modi had also said in his speech that research has shown that extensive use of pesticides in crops would destroy honey-bee colonies, for which proper analysis should be done to understand which are beneficial insects and which are harmful.

“We have till now managed to register 160 animal species, but our bio-diversity reserve is much larger than this and, hence, research should be done to register more species,” the Prime Minister said.

Warning scientists against the ill-effects of global warming on agriculture bio-diversity, Modi said studies had shown that around 15% of original animal species would be wiped off in the next few years owing to climate change.

He said India with around 47,000 plant species, 89,000 animal species and 6.5% of world agro-biodiversity research should play a leading role in the world to maintain and conserve bio-diversity.

Agriculture Minister Radha Mohan Singh and noted agriculture scientist M S Swaminathan also addressed the gathering.

Around 900 delegates from 60 countries are attending the three-day Congress, which will encourage a dialogue among relevant stakeholders to better understand everyone's role in agro-biodiversity management and the conservation of genetic resources.

There are around 390,000 species of plant the world over, but only 5,538 plant species are known to humans. Currently, only 12 plant species and five animal species are used to produce 75% of the world's food, according to a study by Food and Agriculture Organization.

India's bio-diversity reserves

- * Home to over 45,000 plant species
- * Home to over 91,000 animal species
- * Global share in land is just 2.5%, but possess over 7-8% of recorded species of plants and animals.
- * Home to four of the 34 designated global biodiversity hotspots
- * Recognised as one of the eight Vavilovian Centres of origin of crop plants
- * India's National Gene Bank is the second largest gene bank in the world storing over 0.4 million collections from 1,800 plant species and their wild relatives