

Agriculture at Cross-Roads in the undivided Kalahandi of the KBK: Need to Look in the fresh Perspective

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Abstract: Agriculture in the undivided Kalahandi region of Odisha, part of the KBK (Kalahandi-Bolangir-Koraput) belt, remains in a state of deep crisis. Despite substantial agricultural potential, the region suffers from systemic challenges such as erratic rainfall, inequitable land distribution, poor irrigation infrastructure, and exploitative market practices. Field studies reveal persistent poverty, marginalization of Scheduled Tribes and Castes, and failures in land reform implementation. The study emphasizes that climatic factors, coupled with policy neglect and globalization pressures, have worsened rural distress—leading to farmer suicides and forced migration. A re-evaluation of agrarian policies, focusing on equitable land access, infrastructure development, and sustainable farming practices, is urgently needed to secure the livelihoods of millions dependent on agriculture.

Keywords: Kalahandi, agriculture crisis, land reforms, farmer exploitation, irrigation, climate change

Introduction:

Odisha is an agrarian state as about 70% of its people are dependent on agriculture. It has often been said that the culture of Odisha is deeply linked with agriculture. Agriculture currently contributes around 18–20% of the Gross State Domestic Product (GSDP) (as per Odisha Economic Survey 2022–23). The state has about 64.09 lakh hectares of cultivable land out of a total geographical area of 155.71 lakh hectares, which accounts for 41.16% of the total area.

The total cultivated land is about 61.50 lakh hectares. Of this, around 40.17 lakh hectares of cultivable land suffers from acidic soil, about 4.00 lakh hectares from salinity, and approximately 3.00 lakh hectares is affected by waterlogging, totalling nearly 7.00 lakh hectares under problematic soils.

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Agriculture, being the backbone of the state economy, contributes a significant portion to livelihoods, if not to output. It provides employment to about 48–50% of the workforce (NSSO PLFS, 2022–23), though this share has declined from earlier estimates of 65%. The average size of landholding in the state is around 1.25 hectares, and the small and marginal farmers account for nearly 83% of the agricultural population. Odisha is classified into 10 agro-climatic zones, based on parameters such as soil structure, humidity, elevation, topography, vegetation, rainfall, and other agro-climatic factors.

The state receives an average annual rainfall of 1452 mm, with about 80% of it concentrated in the monsoon months from June to September. The total irrigation potential of the state is about 41.41 lakh hectares as of 2023, with 27.63 lakh hectares (approximately 44.92%) available for Kharif crops and 13.78 lakh hectares (approximately 33.27%) for Rabi crops.

The main crop in the state is paddy, and total food grain production has shown improvement. During 2022–23, total food grain production in Odisha was recorded at approximately 97.5 lakh tonnes, up from 85.92 lakh tonnes in 2007–08, contributing around 4.1% of the national food grain output. However, the agricultural sector in Odisha continues to face numerous challenges, including:

- Low productivity due to problematic soils (acidic, saline, and waterlogged),
- Inadequate and uncertain irrigation facilities,
- Low seed replacement rate (around 33% vs. desired 50%+),
- Low level of fertilizer consumption, currently around 58–60 kg/ha, which still falls short of the national average of about 135 kg/ha,
- Low use of mechanization and modern technology,
- Insufficient capital investment in rural agricultural infrastructure and innovation.

In the KBK region (Kalahandi, Bolangir, and Koraput), about 80% of the population is dependent on agriculture, which is higher than the state average of 70%. Despite having a significant portion of geographical area under cultivation, the region continues to be marked by low productivity, poor infrastructure, and chronic poverty.

Approximately 39% of the total geographical area in Odisha is cultivable. Within this, upland, middle land, and lowland account for 57%, 24%, and 19% respectively. Among the farming population, 68% are small

and marginal farmers, while the remaining 32% are medium and large farmers (as per Agricultural Census 2021–22). Paddy remains the primary crop in the KBK region, occupying around 56% of the total cultivable land. Other significant crops include wheat, maize, ragi, jhudang, kosala, green gram, black gram, horse gram, til (sesame), groundnut, mustard, potato, jute, and sugarcane.

The average paddy productivity in Odisha currently stands at 2.6 tonnes per hectare (2,600 kg/ha), a significant rise from the earlier estimate of 1.5 tonnes/ha. However, there remains wide inter-district variation in yields. The fertilizer consumption per hectare across the KBK districts is still below the national average. For example, in 2022–23, average fertilizer use in these districts ranged from 50 to 90 kg/ha, while the national average exceeds 135 kg/ha.

The average rice yield per hectare (2022–23) in quintals (1 quintal = 100 kg) across major KBK districts is approximately:

- Balangir: 22.3
- Kalahandi: 23.5
- Koraput: 24.1
- Malkangiri: 25.4
- Nabarangpur: 26.7
- Nuapada: 21.8
- Sonepur: 24.6

Crop Production Data – Nuapada District (Latest available data, 2022–23):

Crop	Production (in quintals)
Paddy	2,43,887
Wheat	93
Maize	3,376
Ragi	1,340
Green gram	4,325
Black gram	12,058

Kolath (Horse gram)	2,861
Til (Sesame)	1,007
Groundnut	12,700
Mustard	25
Potatoes	1,435
Suger cane	5,086

In Nuapada district, the net sown area in 2022–23 was approximately 1.94 lakh hectares, while the net sown area in Odisha as a whole was about 56.54 lakh hectares. The total fertilizer consumption in Odisha for the agricultural year 2022–23 stood at approximately 992.44 thousand metric tonnes, comprising:

- Nitrogen: 800.00 thousand metric tonnes
- Phosphate: 302.1 thousand metric tonnes
- Potash: 234.34 thousand metric tonnes

The average fertilizer consumption per hectare in Nuapada district is 69 kg, compared to the state average of 135 kg/ha and the national average of 146 kg/ha (Source: Ministry of Agriculture, 2023). The average landholding size in Nuapada district is now 1.15 hectares, slightly below the state average of 1.25 hectares, as per the Agricultural Census 2021. The cropping intensity of the district remains around 118%, indicating moderate use of multiple cropping practices. The district has 49.27% of its total geographical area under cultivation.

The per capita food grain production in the district is about 69 kg per year (2022–23 estimate). According to the 2011 Census (latest available full data), rural main agricultural labourers constitute 44.79% of the rural workforce, while main agricultural farmers account for 32.94%. The average annual rainfall in Nuapada district is approximately 1,378.2 mm, although this varies widely year to year, with recent fluctuations due to climate variability. Despite 80.34% of the population in the district depending on agriculture, a critical question arises: has it truly been a profitable venture over the past decades? While landholding size, rainfall, and cropping intensity suggest a potential for prosperity, the grassroots reality tells a different story.

Field studies and local analysis indicate that the vulnerable segments—Scheduled Tribes (STs), Scheduled Castes (SCs), Other Backward Classes (OBCs), women, and children—continue to face significant hardships. Instances of starvation deaths, farmer suicides, reports of child trafficking, cooked food theft, distress sale of labour, and forced migration highlight persistent poverty and systemic failures.

These raise critical concerns: Has democratic India failed its agricultural citizens? Why are such severe issues still unresolved decades after independence?

Major Agricultural Issues in the District

The problems identified in this study fall into two broad categories—natural and man-made—including:

- I. Irregular and erratic rainfall
- II. Inequitable distribution of land
- III. Improper implementation of land reforms
- IV. Distress sale of crops and exploitative systems
- V. Inadequate irrigation infrastructure
- VI. Impact of Global Warming on Agriculture and
- VII. Negative Impact of Globalization

Irregular & Erratic Rainfall

The district, along with the entire KBK (Kalahandi-Balangir-Koraput) belt of Odisha, is predominantly rain-fed and hence faces a highly uncertain agricultural pattern. Although rainfall supports the majority of agricultural activity, it does not provide a secure livelihood. A significant number of researchers argue that rainfall alone is not the principal cause behind recurrent droughts in the undivided Kalahandi district and its neighboring regions. They cite long-term rainfall data—from 1977 to 1991—which shows that rainfall in the region has been inconsistent. For instance, 1988 recorded the lowest rainfall at 978 mm, while 1990–91 witnessed the highest at 2,247 mm.

This school of thought, represented by scholars like Jagdish Pradhan and Mohapatra Rajesh, suggests that drought and poverty in the region are not merely results of meteorological or agricultural factors. Conversely, Dr. Deo and Barma (2000) refute this, arguing that relying solely on rainfall data provides an incomplete and potentially misleading picture. Their analysis indicates that the situation is more complex,

particularly due to the paddy-centric assessment, which overlooks other crops often grown by marginalized communities and used as emergency food buffers.

Furthermore, rainfall and drought situations vary significantly from block to block and even between Gram Panchayats. In Nuapada district, for instance, Sinapali block suffered less crop failure than Khariar block during the drought year of 1996–97, despite Khariar receiving more rainfall. This contradiction underlines that soil moisture retention capacity plays a crucial role—an aspect ignored by many analysts. Notably, 84% of the land in undivided Kalahandi has low moisture retention, exacerbating drought impact. Also, erratic rainfall, marked by intermittent dry spells, intensifies moisture stress conditions for crops (Deo & Barma, 2000).

According to the India Meteorological Department (IMD), Nuapada district and its Padampur Sub-division (now part of Bargarh, formerly Sambalpur) are classified as ‘Drought-Prone Areas’ in both geographical and meteorological terms. These regions, part of the Eastern Ghats, experience scanty, irregular, and unpredictable monsoons, primarily because they depend on the Southwest Monsoon—which travels through the Narmada-Tapi valley, located between the Vindhya and Satpura ranges. This topography causes rainfall to be inconsistent and unreliable for sustained agricultural success. It is noteworthy that the Arabian Sea branch of the southwest monsoon gets squeezed between the Vindhya and Satpura mountain ranges, losing much of its moisture after traveling over 1,200 km. As a result, it discharges most of its remaining rainfall in the western portion of Nuapada district, which leads to a very low water table—even at depths of 200–300 meters. According to a study, the borewell irrigation scheme of the Government of Odisha has largely failed to address this issue.⁹

Inequitable Land Distribution

Unequal landholding patterns in the district have been highlighted by various researchers. Pradhan (1993) denies such inequality, citing that the per capita cropped area in the district is 0.592 hectares—one of the highest in Odisha, where the state average is 0.332 hectares. Furthermore, the total number of landholdings per population ranks second in Odisha, just after Balangir district.¹⁰ However, Dr. Deo and Barma (2000) present contrasting evidence. Their analysis reveals that land ownership is highly skewed. Households with secure Kharif crop lands are predominantly those of traditional landlords, a result of historical inequalities.¹¹

Surprisingly, even less than 1% of households own over 95% of best-quality lands, while 5% of total landholdings are controlled by a staggering 99% of the population, mostly consisting of marginal and small farmers. Larger landowners dominate the quality land segments. The study further notes that none of the households owning less than 2 acres of land possess high-quality or high-productivity land. Consequently, only 6% of households in undivided Kalahandi district can sustain themselves solely through cultivation. Just 1% of cultivators are reported to have surplus food, while the rest are dependent on alternative sources for food security.¹²

Improper Implementation of Land Reforms

Access to land and control over land resources is not only a prerequisite for rural development but also vital for poverty alleviation. Odisha was among the first Indian states to enact land reforms, introducing land ceiling rules to redistribute surplus land to the landless. However, despite this early start, the implementation of land reforms in Odisha has been severely lacking. Many landless people still do not possess legal titles or physical access to redistributed land. The Land Ceiling Act, introduced in 1974, aimed to acquire surplus land from large landowners and redistribute it to the landless in order to improve their socio-economic condition and enhance agricultural productivity. As per the law, 0.7 hectares per individual was considered the ceiling for irrigated land, while a larger area was permitted for unirrigated land. Standard acres were distributed to the landless for agricultural purposes, along with wastelands and homestead lands. In recent years, to evaluate the efficacy of the Land Reform Act, a social audit was conducted jointly by the Odisha Gabesana Chakra, Khariar Chapter and the Council for Social Development, New Delhi (which included the involvement of the author). The audit was carried out in the Ranimuda and Birighat Gram Panchayats (GPs) of Khariar Block. The audit had four main objectives:

1. To assess the status of implementation of the land distribution program.
2. To evaluate whether the land distribution program had met its basic objectives.
3. To examine how the program has contributed to improving the living standards of the landless.
4. To involve officials of the concerned departments in taking spot-action to ensure effective land distribution to the landless.

For the purpose of this audit, 6 villages from Ranimuda GP and 5 villages from Birighat GP were selected as focus villages—all of which were revenue villages. The total number of households (HHs) surveyed was

1969, and the total population was 7974. Among them, 47% were tribals, and the remainder were Scheduled Castes (SCs) and Other Backward Classes (OBCs). The Below Poverty Line (BPL) percentage was as high as 81%. Based on the criteria set by the Government (i.e., one standard acre), 59% of STs, SCs, and OBCs were found to be landless. In total, 72.78% of landless households possessed less than one standard acre. Of these, 27.22% were Sukhbasi (squatters residing on government land) in both GPs.

There were:

- 336 HHs (17.06%) who were homestead land beneficiaries.
- 92 HHs (4.67%) who held ceiling-surplus land.
- 69 HHs who had encroached land but had gained right of settlement through informal or formal processes.

The audit of the joint venture identified the following seven key problems associated with the land reform process:

1. Patta (land title) is issued to 16.6% of households, but they are not in physical possession of the land.
2. Pattas are given, but only for a portion of the total land actually under their possession.
3. In many cases, land is under possession, and taxes are being paid, but pattas have not yet been issued.
4. Pattas have been issued, but lands are not demarcated. In many cases, even when lands are demarcated, they are not taken into possession due to poor quality (e.g., hilly terrain, rocky soil, graveyards, etc.).
5. Beneficiaries have applied for pattas, but they have not yet been allotted.
6. 41.6% of beneficiaries possess pattas, land, and are cultivating it. However, 75% of these beneficiaries are in cases of encroached land, which they have been cultivating for a long time and could now claim legal ownership over.
7. Some landless households have still not applied for land allotment due to various reasons.

From the social audit, it was also revealed that 50% of beneficiaries have not physically taken possession of the land, though they are regularly paying taxes on it.

Thus, the study demonstrates that land reforms over the past 30 years have largely failed to produce the desired outcomes due to the following reasons:

1. Non-possession of land by the beneficiaries.
2. Lack of access to formal records of rights.
3. Allotment of unproductive lands.

As Stiglitz rightly points out, "It has to be done properly, peacefully and legally ensuring that workers get not only land but access to credit and the extension services that teach them about new seeds and planting techniques, which could provide an enormous boost to output." An empirical social appraisal of the Boden Block during 1990–93 shows that an average family of five could maintain a normal livelihood only if they had access to 8 to 12 acres of cultivable land during a normal monsoon year. If the family held less than 8 acres, survival was difficult. In fact, more than 70% of households in the district owned less than 5 acres, primarily among Scheduled Tribes (STs) and Scheduled Castes (SCs)—the most vulnerable groups.

Distress Sale of Crops & an Active Presence of an Invisible Exploitative System

In the district, there exist invisible exploitative systems that force farmers into the distress sale of paddy, a trend that has persisted for the past few decades. This finding is both recent and unique, and so far, no detailed explanation has been offered. Despite the persistence of this issue, little to no attention has been paid to this invisible exploitative system affecting farmers.

A study was conducted by an ex-teacher-turned-farmer during 2009–10 at Khariar Mandi, where farmers from Khariar, Boden, and Sinapali blocks of Nuapada District and neighbouring Kalahandi and Balangir districts rely heavily on paddy sales. Together with another farmer, he undertook a detailed investigation into the Fare & Average Quality (FAQ) standards of paddy.

The study followed a scientific methodology with government staff support. A total of 11 samples of paddy were randomly taken from farmer stocks at the market yard. The testing was carried out over two consecutive days, and the Moisture Content (MC) of the paddy was measured using official instruments by the Regulated Market Committee (RMC) staff. Measurements were authenticated by both farmers and government officials. However, due to lack of scientific equipment, immature paddy and other non-paddy items were excluded from the study.

The results were startling. All 22 samples revealed that the Moisture Content (MC) ranged between 12% and 13%, well below the FAQ standard of 17% set by the Government of India for all of India. This discrepancy is significant. To explain, under the national FAQ standard, 1 quintal of paddy should have 17 kg moisture and 83 kg actual paddy. But in Nuapada district, the MC was only 13 kg, implying that farmers

were delivering 87 kg of actual paddy. As a result, 4 kg of paddy per quintal went uncompensated, leading to major losses. This systemic under-accounting results in direct monetary losses for farmers, as shown below:

Loss Calculation:

- Minimum Support Price (MSP) for paddy in 2011 = ₹1110 per quintal
- Price per kilogram = $₹1110 \div 100 = ₹11.10$
- Loss per quintal (4 kg unaccounted) = $₹11.10 \times 4 = ₹44.40$
- Loss per metric ton (1000 kg) = ₹444.00
- Total procurement during 2010–11 in the district was 32,000 tons.
- Thus, the loss moves to $444 \times 32,000$ quintal = Rs. 14,20,80,000 (Rupees Fourteen Crore Twenty Lakh Eighty Thousand)

Indeed, it is certainly a huge loss where a ruralite under BPL lives on Rs. 17.50 per day as per the Planning Commission calculation. This invisible exploitation of the farmers has been continuing since decades. This is for the first time that this truth has come out. The loss in other non-paddy items like Jhari, Gurji, Madia, Kodo and the pulses items like rehel (harad), chana, mung, biri, kolthi etc. are yet to be calculated where small and marginal farmers are the direct victims. There are still other losses which are not counted here.

The question is how & why this phenomenon is occurring over the years unlike in rest of India and coastal districts of Odisha, the farmers of the district and other KBK districts do not bring the cut paddy plants to the threshing ground soon after cutting them. The farmers traditionally allow those crops to dry to the extent possible in their fields for days together. This is how the paddy loses its moisture content. This is well known to the officials who do not disclose or make it public for fear of public disclosure and for their easy profit. According to the researcher, the farmers of the district are regularly being cheated of their hard-earned money which ultimately lead them to where they are, e.g., to penury.¹⁷

Problem of Irrigation

Despite repeated claims of the Government to provide 35% irrigation to every block of Odisha, nothing has come out yet. The district's potential for irrigation is only 14%, compared to the state's 33%. The startling result is that none of the irrigation projects of the different areas of the district is living up to their potential.

The Upper Jonk project has the potential of irrigating 9110 hectares, but during the drought year 2002 it could provide irrigation to only 300 hectares; the Sunder irrigation project only to 250 hectares compared to its potential of 4452 hectares; Saipala irrigation project failed to irrigate even an acre of land during the same period though its potential is 561 hectares. When we look at the potential of the Minor Irrigation it could afford to irrigate little more than 17.03% hectares. The following table shows the clear picture thus:

Serial No.	Name of the Irrigation Project	Potential (In Hectares)	Irrigation Provided (In Hectares)	Percentage (%)
1	Upper Jonk	9110	300	3.29
2	Sunder	4452	250	5.61
3	Saipala	561	0	0.00
4	MIPs 42	5204	2760	53.03
Total	3 + 42 Projects	19417	3310	17.03

Source: District Statistical Handbook – 2007. Dr. Deo F. Roots of Poverty

Low Literacy & Low Awareness

The major cause of exploitation in the district is low literacy and low consciousness among the people in general and STs, SCs and OBCs in particular. Because high rate of literacy and deep consciousness lead to assertion of one's rights and entitlement. The local landlords, moneylenders, traders, contractors and the local officials are hand in glove with each other and they guarantee that the locals are where they are. Coupled with this, anti-poverty programs are insufficient and most of it does not reach the needy. Further, agricultural labourers are most neglected and therefore vulnerable to easy exploitation. 30% of the total population entirely depend on wage labour and another same percentage partly. Thus, the district is labour surplus agrarian economy. Till date, agriculture is not that advanced which requires to be at this stage.¹⁹

Impact of Climate Change on Agriculture

Global warming owing to climate change is the most worrying factor not only for the environmentalists and policymakers but also for the small and marginal farmers living in arid and semi-arid zones of India. According to the World Meteorological Organization (WMO), climate change can adversely affect global environment, agricultural productivity, and the quality of human life. It says, it will be more difficult for farmers to carry on farming in the increased temperatures. Further, it says that it affects every one of us on earth. The worst sufferers would be hundreds of millions of small and marginal farmers and people—

especially the tribals—depending on forests who are already in great vulnerability due to rapid deforestation. The rise in global temperature due to climate change would affect agriculture. In temperate zones, a rise in temperature may help countries increase food productivity, but it will have adverse effects in India. The monsoon, which accounts for India's 75% rainfall, to a great extent impacts its agriculture and livelihood of tens of millions of small and marginal farmers. It is likely to intensify the variability of monsoon dynamics, leading to a rise in extreme seasonal aberrations like increased precipitation and devastating floods in some parts of the country, as well as reduced rainfall and prolonged drought in other areas. The western districts of Odisha have already started witnessing those entire phenomena.

Further, the World Bank report on climate change impact based on case studies in drought-prone regions of Andhra Pradesh, Maharashtra and Odisha are on the threshold of climate tolerance limits. It indicates the possibility of declining yields of major dry land crops in the above-mentioned states. Like WMO, the World Bank report also apprehends that the poor and marginal farmers will be the worst hit.²⁰

Negative Impact of Globalization

The then Minister of Agriculture, Government of Odisha, replying to the question of an Honorable MLA, Katabanji, on the floor of the Assembly on farmers' suicide, stated that the Government of Odisha has received 96 cases of farmer suicides in the state²¹ (12.12.11, *Sambad*), where 5 suicide cases were from the Nuapada district itself. Since then, onwards, two more cases of farmer suicides have occurred in the district²² (*E TV, Khariar office*), and the chain may continue in the future. The reason behind such cases was ascribed to debt trap due to crop failures. Duryodhan Majhi, present ex-minister of the ruling Naveen Patnaik Government and an inhabitant of the same district, confessing himself of the said cases, holds that the suicides have occurred in the irrigated areas of the Sunder Irrigation Project and Upper Jonk Irrigation Project of the district. The single reason for that is indebtedness of money on ...high interest rate for agricultural purposes. When crops—especially high-yield varieties, paddy and other cash crops—failed, the farmers of the said areas, finding no way out, committed suicides.

According to Sunil, General Secretary of Samajwadi Jan Parishad and an economic analyst, there is a direct co-relation between open market policy on agriculture prevailing in the country and the farmers' suicides. He cites examples of the farmer suicides cases in Andhra Pradesh, Maharashtra, Karnataka, Gujarat, and

Punjab in India. ²³ the trend had started initially in Andhra Pradesh, when Chandra Babu Naidu was the Chief Minister an ardent advocate and leading practitioner of the LPG (Liberalization, Privatization, and Globalization) in India. It was he who expedited the LPG process, particularly with regard to agriculture. When the fruits of the said process started bearing over the years, cases of farmers' suicide cropped up one by one in the state. It was followed by Maharashtra, Gujarat, Punjab, and Karnataka, where thousands of farmers committed suicides. And now the state of Odisha is no exception in this regard. The suicide chain is continuing in India.

In today's globalization process, the farmers' community and the agriculture sector are at the forefront of the frontal attacks of the US-led capitalist countries' monopolistic policies. And no such report from other sectors is pouring in as from the agricultural sector. Even GoI's Rs. 3750 crores package to the farmers could not stop suicides by the farmers. On the one side, input cost is ever rising on seeds, fertilizers, insecticides, labour, diesel, electricity, etc., and on the other, the output cost of agricultural produce is decreasing due to this factor or other factors compared to other commodities (Interview with Pradhan J, an expert on agriculture and the President of the Paschima Odisha Krusijibi Sangh).

Even a farmer of the Boden block explained the input cost of a mineral drinking water bottle is Rs. 1.25 paise and sold at the price of Rs. 12.00 to Rs. 15.00. This is what makes the difference (Interview with Singh Atindra) with the farmers. As if these were insufficient, the Government under directives from IMF, World Bank, and WTO, started withdrawing subsidies from the agricultural sector gradually. ²⁴

On July 18th, 2005, the then UPA Government-I signed an agreement with the US on agricultural relationship to take Agricultural Knowledge Initiative (AKI). The agreement states that the US, along with the MNCs of the industrialized capitalist countries, will have 80% share in agriculture and 14% shareholding in retail marketing in India. The IMF and World Bank, together, will prepare agricultural policies for India. The National Knowledge Commission of India, after obtaining necessary agricultural know-how from the MNCs, will impart teaching and training to the agricultural universities and scientists in India.

India's objective was to bring its agriculture on par with that of the capitalist countries. For this, the only option left with India was to go for application of transgenic seeds—available with those countries. The agreement states that the US will control four areas of Indian agriculture. Those are:

1. Universities of agriculture, National Agricultural Research Institute to control syllabus, research, and training;
2. Regulate and control food processing, chemical fertilizer, pesticides, and agricultural machinery;
3. To ensure application of biotechnology, genetically modified seeds (GMS) in the hands of the US; and
4. To improve the lot in irrigation on a Public-Private-Partnership (PPP) mode.

The other conditions of the agreement are: both the Central and State Governments will provide necessary infrastructure from their own budget. Cotton, Jatropha, flowers will be produced on orders from the MNCs. MNCs will trade without any hindrance on GMS & seeds, to make fisheries, poultry, and dairy farming profitable. GMO will be applied, Americans' MNCs will train Indian agricultural scientists for the Second Green Revolution, and all related institutions will be handed over for their control. Both the Governments will provide necessary Jal, Jamin (water, land) and infrastructure to the MNCs for contract farming and future trading, food processing will be taken care of by the MNCs themselves, and there will be no limitation on FDI on food and agriculture.

In his speech of Independence Day, 2011, Dr. Manmohan Singh reiterated that India is in need of the Second Green Revolution. Critics apprehend that in the given emerging scenario, the role of the farmers will be too little and they will lose their rights over the resources. The US will establish 30 numbers of Agri Hubs in Eastern India including Odisha to help India achieve her Second GR objectives. This seems more like pretension on the part of the US to take indirect control of the rich natural resources of Eastern India—reflective in the AKI.²⁵

Hence, agriculture of this region is gheraoed from all around to have an all-out attack both natural and man-made to break the backbone of the farming community. Recently, the CAG report (dated 31st March 2011 on agriculture) placed and tabled in the State Assembly shows that 2% of the total 64.09 lakh hectares of agricultural lands in the state are converted into homestead lands for commercial use. This all happened due to the lack of proper coordination between the Revenue and Agriculture Departments of the

Government of Odisha. Definitely, this will affect agricultural production at a time when the population of the state is ever rising. ²⁶

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