



INDIA SUSTAINABLE PALMOIL

IPOS

INDIAN PALM OIL SUSTAINABILITY FRAMEWORK



Solidaridad





Release of Indian Palm Oil Sustainability (IPOS) Framework, Mumbai, India (13 September 2017)

Stakeholders



Solidaridad



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Ruchi **INDOCERT**



IPOS
Indian Palm Oil Sustainability Framework

FOREWORD

It is a matter of pleasure to launch the IPOS- Indian Palm Oil Sustainability Framework. India's own Palm Oil sustainability framework is developed to promote sustainability, improving production, farmers' profitability and robust edible oil industries/trade. IPOS would potentially contribute in coherence under the national initiatives towards inclusive and sustainable palm oil and edible oil sector in India as well as in other Asian countries.

Palm oil and palm-derived products are being used widely throughout the world over because of its extremely efficient nature as versatile vegetable oil. The future demand for global vegetable oil is likely to be met to a major extent by palm oil because of its inherent nature of high oil yield.

This sector also offers vast employment potential in rural areas through oil palm cultivation and in processing including product diversification, value addition and by product utilisation. The crop has an appreciable level of carbon sequestration potential that makes the crop attractive with reference to climate change adaptations.

Government of India is committed towards increasing the Vegetable oil pool to attain self-sufficiency through various measures like area expansion, increasing the irrigation facilities, adoption of high yielding varieties and high production technologies in the annual oil seeds and to promote Oil Palm cultivation in a Mission Mode approach. In addition, India is the leading player in the edible oil industry, being the world's largest importer of palm oil from Indonesia and Malaysia has a significant role to play in driving sustainability agenda in the palm oil sector. With increase in per capita income and accelerated growth of population, demand for vegetable oil is increasing progressively, which will call for more production or more import. As palm oil is mostly consumed by low income segment, it is imperative to create a balance between improving domestic production, demand, import costs, policies and achieving affordable food prices for consumers.

In the coming decades the issue of sustainability will be the greatest challenge. The present phase of changes being encountered by the agricultural sector, such as reducing availability of quality water, nutrient deficiency in soils, climate change, farm energy availability, loss of biodiversity, emergence of new pests and diseases, fragmentation of farms, rural-urban migration, coupled with trade regulations are some of the new challenges. In this context, we need to adopt more efficient and sustainable practices. Economic growth, social cohesion and environmental sustainability must move forward in mutually supportive manner. Sustainable production and trade is capable of transforming industries and lives all over the globe.

Adequate steps need to be taken to ensure that the country becomes self-sufficient in edible oil and oilseeds production. In this task, oil palm could play a major role in view of its high productivity potential. In addition, to address sustainability concerns

with-in the sector enabling policies and regulations are also required. Commitment by the government and sincere involvement of stakeholders will improve the present situation to a greater extent.

In this context, the partnership between Solidaridad and The Solvent Extractors' Association of India, (SEA), aiming to enhance the contribution of vegetable oil sector in Indian economy, food security, employment, well-being of farmers and ecosystem conservation outcomes in an inclusive manner to foster the development and growth brought out Indian Sustainable Palm Oil document(IPOS). With many rounds of consultations with national stakeholders this document content was strengthened.

This IPOS will be the guidelines for resolving problems and to boost sustainability in the sector. It would address the concerns related to sustainability in palm oil sector with ever increasing domestic demand, improving farmers' profitability and self-sufficiency of edible oil in India. IPOS contains principles and standard practices which are economically viable, environmentally appropriate and socially beneficial and are aligned with national and international legislation and applicable regulations. IPOS would improve sustainability practices of supply chain of stakeholders and also facilitate them in achieving compliance with applicable national and international regulations.

We hope that the IPOS would bring out the existing strengths of stakeholders and address the gaps in Oil palm sector with edible oil security in country. It would also potentially create harmonisation with other national initiatives undertaken for sustainability in the palm oil sector. We believe that it would bring-in significant contribution in the sector in inclusive manner with ecosystem conservation outcomes, smallholders' livelihood, efficient business performances and robust industries in India as well as in main producing countries in Asia.

We compliment the stakeholders for their imperative efforts and worthy contributions in the development of Indian Palm Oil Sustainability Framework-IPOS, which has resulted into a robust framework for sustainable development and future growth of palm oil sector.



Mr. Atul Chaturvedi
President,
Solvent Extractors' Association of India



Dr. Shatadru Chattopadhyay
Managing Director,
Solidaridad Network Asia



Dr. P. Rethinam
President,
SOPOPRAD-IIOPR

प्रीति सूदन
सचिव

PREETI SUDAN
SECRETARY

Tel. No.: 011-23382349
Fax : 011-23386052
E-mail : secy-food@nic.in



भारत सरकार
खाद्य एव सार्वजनिक वितरण विभाग
उपभोक्ता मामले, खाद्य और सार्वजनिक वितरण मंत्रालय
कृषि भवन, नई दिल्ली - 110 001
Government of India
Department of Food and Public Distribution
Ministry of Consumer Affairs
Food & Public Distribution
Room No. 170, Krishi Bhawan,
New Delhi-110 001

6th September 2017

MESSAGE

The significant role of the Solvent Extractors' Association of India along with Solidaridad, South and South East Asia and SOPOPRAD (Society for Oil Palm Research and Development)-IIOPR (Indian Institute of Oil Palm Research) for their active engagement with national stakeholders to enhance the sustainability performance of Indian palm oil and edible oil sector is worthy of appreciation. The collective effort to develop Indian Palm Oil Sustainability (IPOS) Framework will potentially improve sustainability performance of Indian Palm Oil sector.

2. It is hoped that the Indian Palm Oil Sustainability (IPOS) Framework will pave the way towards promoting sustainable production and trade along with improvement in the social, economic and environmental performances of Palm Oil sector.

3. I wish success for this endeavour to SEA, Solidaridad and SOPOPRAD-IIOPR along with stakeholders for their noteworthy role in creating IPOS Framework and promoting sustainable practices in palm oil sector.


(Preeti Sudan)



सत्यमेव जयते

अध्यक्ष

Chairperson

Telefax : 011-23220991

Email : chairperson@fssai.gov.in

भारत सरकार
भारतीय खाद्य संरक्षा एवं मानक प्राधिकरण
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
एफडीए भवन, कोटला रोड, नई दिल्ली-110002
Government of India
Food Safety and Standards Authority of India
Ministry of Health and Family Welfare
FDA Bhawan, Kotla Road, New Delhi-110002
Website : www.fssai.gov.in

MESSAGE

I am happy to learn that The Solvent Extractors' Association of India (SEA), with the help of Solidaridad, Society for Oil Palm Research and Development - Indian Institute of Oil Palm Research and other stakeholders, has developed Indian Palm Oil Sustainability Framework to improve the sustainability of the palm oil sector in India.

India is one of the largest importers of palm oil in the world. We need to intensify efforts to increase yield of the domestic oil palm crop. I am confident that the Palm Oil Sustainability Framework would help in the forging of strong linkages of the palm oil industry with oil palm farmers to improve production and productivity and reduce our dependency on imports.

I convey my best wishes to SEA, Solidaridad, SOPOPRAD - IIOPR in developing Indian Palm Oil Sustainability Framework to promote sustainable practices in palm oil sector.

Ashish Bahuguna

Dr. B. Rajender, IAS
Joint Secretary



भारत सरकार
कृषि एवं किसान कल्याण मंत्रालय
कृषि, सहकारिता एवं किसान कल्याण विभाग
Government of India
Ministry of Agriculture & Farmers Welfare
Department of Agriculture, Cooperation
& Farmers Welfare

D.O. No. 3-52/2016-OP (SB) - 349

Dated: 31st August, 2017

Dear Shri Chaturvedi,

I am pleased to know about the significant role of The Solvent Extractors' Association of India along with Solidaridad, South and South East Asia and SOPOPRAD (Society for Oil Palm Research and Development) – IIOPR (Indian Institute of Oil Palm Research) for their active engagement with national stakeholders to enhance the sustainability performance of Indian palm oil and edible oil sector. And with all collective efforts they have developed Indian Palm Oil Sustainability (IPOS) Framework to potentially improve sustainability performance of Indian Palm Oil Sector.

It is appreciable to know that Indian Palm Oil Sustainability (IPOS) Framework will pave the way towards promoting sustainable production and trade along with improvement in the social, economic and environmental performances of Palm Oil sector. I hope the IPOS framework bring out the existing strengths and gaps to be addressed in Oil Palm sector with edible oil security in country.

I wish success for this endeavour to SEA, Solidaridad and SOPOPRAD –IIOPR along with stakeholders for their noteworthy role in creating IPOS Framework and promoting sustainable practices in palm oil sector.

with regards,

Yours Sincerely,
B. Rajender
31.8.2017
(B.Rajender)

Shri Atul Chaturvedi,
President,
The Solvent Extractors Association of India
142, Jolly Maker Chambers No. 2
14th Floor, 225, Nariman Point,
Mumbai – 400021.

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Executive Summary

Oil Palm (*Elaeis guineensis*), is the perennial source of palm oil, and palm kernel oil, yields 4 to 6 tons of CPO and 0.4 to 0.6 tons of palm kernel oil /ha/year. It is a high oil yielding crop than most other competing crops. The cost of production of oil is also low which means food production is also cheaper and ultimately, food is more affordable. As of today, it has acquired the status of the largest source of vegetable oil in the world. Since it is an important ingredient for food, feed and fuel or oleo-chemical products; its production and trade in the world is rapidly catching up. The demand for palm oil is booming because of:

- I. Increase in consumption of palm oil as foodstuff especially in developing countries and emerging economies such as India and China;
- II. Increasing demand for consumer products;
- III. Expanding use of palm oil in biofuel production

Looking at the contribution of Oil Palm so far, it is likely that the future demand encompassing as edible oil, industrial use and bio-fuel will be met by this crop. On account of globally ever increasing demand for edible oil, it is visualised that the global area and production under oil palm will further grow in future to cater to the needs.

Considering the current as well as future demand this calls for cautiously addressing the socio- economic and environmental sustainability issues in the sector so that the Palm Oil production and trade can be achieved in sustainable manner. It is important that producers, buyers, governments, private sector and civil society must “align” their perspective and engage everyone for sustainable palm oil in Asia.

“Sustainable palm oil has potential to advance as many as 12-13 UN sustainable development goals (SDGs) out of the 17 goals.”

As India has the potential to play a significant role in promoting sustainable practices in palm oil sector, it becomes crucial that organisations like Solidaridad with many decades of experience in promoting sustainability, global standard setting and implementation; The Solvent Extractors’ Association of India (SEA); and Society for Promotion of Oil Palm Research and Development- Indian Institute of Oil Palm Research to actively engage with national stakeholders to enhance the sustainability performances of Indian palm oil sector.

The most commonly cited reasons for lack of initiatives for sustainable palm oil are:

- I. Price sensitivity and market dynamics;
- II. Cost of Certification;
- III. Lack of favourable policy and regulatory environment; and
- IV. Little awareness and demand for sustainable palm oil

In addition, India is a highly price-conscious market. It is imperative to create a balance between improving domestic production, demand for sustainable palm oil, import costs, policies and achieving affordable food prices for consumers as it is mostly used by low income population group in a country.

In these circumstances, the Indian Palm Oil Sustainability Framework could potentially improve sustainability performance of Indian Palm Oil sector.

Indian Palm Oil Sustainability (IPOS) Framework has been designed in harmonization of existing national and international legislations and regulatory mechanism to promote sustainable production and trade along with improvement in the social, economic and environmental performances of Palm Oil sector. The framework is being worked out with intensive engagements and consultations with various stakeholders, experts and subject matter specialists representing the palm oil sector. The sustainability framework based on Principle, Criteria and Indicators, would not only improve competitiveness amongst the stakeholders (smallholders, businesses, industries and government), but will also facilitate them in achieving compliance with national regulations and sustainability standards in a step-by-step manner.

Global Palm Oil Production and Consumption

Palm oil and palm kernel oil represent 33% of the global vegetable oil production. Palm oil is cultivated in approx 18.11 million hectares, which accounts for 6% of the whole cultivated land for vegetable oil in the world (Oil World 2016). Indonesia and Malaysia leads global palm oil production and exports. The industry fuels the economies of both these nations and provides livelihoods to millions. India is among the largest importer of palm oil; mainly used as edible oil for food security of the country.

Indonesia and Malaysia supply around 85% of the palm oil produced globally (of which Indonesia contributes 55%; Malaysia contributes 30%) followed by countries such as South and Central America, Thailand and Western Africa. Assessment of Global vegetable oil status over a period of time revealed the dominance of soybean oil between 1960 and 2004. Later during 2005 Palm Oil took the premier position leaving soybean in the second place on account of its unprecedented growth during the period.

In Indonesia, approximately 35% of the crude palm oil production derives from smallholders and in Malaysia, they represent about 40% of the palm oil production. Palm oil is an important asset for the producing countries as it provides rural employment and is a crop that smallholders can grow easily. The total area of oil palm plantation in Indonesia is currently eight million hectares (approx.) which has doubled since the year 2000, when only approx. four million hectares of land was under Oil Palm plantation. This figure is expected to increase by 13 million hectares by 2020 (Ministry of Agriculture, Indonesia). State owned plantations play a modest role in Indonesian palm oil industry as big private enterprises produce approximately half of the total Indonesian production.



Social and Environmental Sustainability Issues and Challenges in Global Palm Oil Sector



Palm Oil Sector Oil Palm cultivation has been a source of significant livelihood improvement for rural communities in Indonesia and Malaysia. Oil palm offers greater returns to labour than other agricultural land use options as well as additional benefits including a shorter fallow period.

Palm oil production and trade is dominated by large enterprises, yet a substantial portion of worldwide production is carried out by small farmers. As large companies are increasingly moving towards sustainability certification to meet consumer demand, smallholders run the risk of being excluded from the certification process. Smallholders often suffer from lower yields due to lack of knowledge on good farming practices, poor financial resources for investment in scientific cultivation and this translates into lower incomes.

In addition, many of the issues are related to land use, land ownership, land rights and acquisition. Land conflicts between indigenous people and local communities and the plantation companies are often the result of the lack of adequate consultation and agreement amongst the parties. Many of the complaints regarding abuses arise due to the lack of understanding by individuals and communities about their rights; how the process works and the procedures they need to follow. Even communities may face the impact of the agriculture sector through pollution of soil and water from the use of agrochemicals.

Agriculture is considered as one of the main drivers of rainforest degradation. The high conservation value and the rich biodiversity in these ecosystem has become threatened as a result of the destruction of forests. The eco-system services provided by rainforests such as water and climate regulation are degrading. As Oil Palm plantations require water throughout the year on a consistent basis, thus water footprint of Oil Palm is also one of the key sustainability issues.

As there are several social and environment linked gaps and issues which need to be addressed adequately. It requires action towards sustainable Oil Palm production and trade through credible mechanism in harmonization with existing sustainability solutions for overall improvement of sustainability performances of Palm Oil.

Indian Palm Oil Sector: Domestic Production and Sustainability Perspective



Oil Palm is an introduced crop in India. The specific feature of expansion of Oil Palm cultivation in India is establishment of plantation by smallholders, unlike in other major Oil Palm growing countries. Establishment of irrigated Oil Palm plantation in India got initiated in 1986 with the support provided by governments and technology back up by research organisations.

GOVERNMENT PROGRAMMES AND INITIATIVES

Indian government is committed for improving self-sufficiency in edible oil in the country through increase in area under oilseeds and plantation with increased yield and better capacity utilization of domestic units. There are several schemes and programmes of state and central government to increase output of palm oil through area expansion. These government programmes provides subsidies to farmers to encourage area under oil palm and also encourage private sector for capital investments. These programmes gave a thrust to Government's efforts for augmenting the production of oilseeds. This is evident by the very impressive increase in the production of oilseeds from about 11.3 million tonnes in 1986-87 to 31.8 million tons in 2015-16.

During VIII-IX Plan (1992-2003), the government promoted Oil Palm Development Project (OPDP) under Technology Mission on Oilseeds & Oil Palm (TMOP) and during X-XI Plan (2004-2013 Integrated Scheme on Oilseeds, Pulses, Oil Palm & Maize (ISOPOM) Oil Palm Area Expansion (OPAE) programme was promoted by the government to support oilseeds production and self-sufficiency in vegetable oil. Under the programme like Oil Palm Area Expansion (OPAE) and Oil Palm Development Project (OPDP) farmers are encouraged to take up oil palm cultivation by extending various kinds of assistance such as input subsidy, planting material subsidy, assistance for purchase of diesel pump-set, leaf chopping machine, weed cutter, harvesting tools, drip irrigation and drilling of new bore-wells in oil palm plantations. Farmers are also trained on technical aspects of oil palm plantation and its management.

National Mission on Oilseeds and Oil Palm (NMOOP) was conceptualized in XII plan during 2014. Apart from area and production of oilseeds and vegetable oil, the other dominant feature which has had significant impact on the present status of edible oilseeds/oil industry has been the program of liberalization. This Government's economic policy allow greater freedom to the open market and encourage healthy competition and self-regulation rather than protection and control. Controls and regulations have been relaxed resulting in a highly competitive market dominated by both domestic and multinational players.

POTENTIAL AND PRESENT AREAS FOR OIL PALM IN INDIA

Unlike Oil Palm grown in other countries under conventional climatic, soil and environmental requirements like temperature, rainfall, humidity, soil type, etc., and on large farms, in India it finds niche in variable agro-climatic regions.

In spite of several ups and downs (fall of price, changed subsidy pattern, power supply problems, poor economic status of growers etc.), at present a total of 0.3 million ha have been planted under Oil Palm (Table 1). With a view to demarcate appropriate niche, the expert committee constituted by the Government of India, identified a total area of 1.9 million ha spread over in 19 states of the country in 2011 for cultivation of Oil Palm.

Potential and Present Areas Under Oil Palm Cultivation in India

S. No	States	Potential Area Identified by Dr. Rethinam and Dr. Chadha (ha)	Area planted Till 2016 (ha)	Balance Potential Area Oil Palm Development (ha)
1.	Andaman & Nicobar Islands	3000	1593	1407
2.	Andhra Pradesh	419500	150530	258552
3.	Telangana	50000	16239	35046
4.	Arunachal Pradesh	25000	330	25000
5.	Assam	25000	570	24990
6.	Bihar	200000	0	200000
7.	Chhattisgarh	48000	2162	47145
8.	Goa	2000	953	1109
9.	Gujarat	260250	5054	254870
10.	Karnataka	260000	41431	212538
11.	Kerala	6500	5769	476
12.	Maharashtra	180000	1474	179086
13.	Meghalaya	50000	0	50000
14.	Mizoram	61000	25741	35,259
15.	Nagaland	50000	140	50000
16.	Orissa	56000	18484	32358
17.	Tamil Nadu	205000	29510	192278
18.	Tripura	7000	530	6470
19.	West Bengal	25000	0	25000
	Total	1,933,250	300,510	1,618,436

Source: Annual Report 2016-17, Department of Agriculture Cooperation & Farmers Welfare

Challenges in Domestic Production

In India, the overall FFB yields from mature oil palm farms is much lower than those of Indonesia and Malaysia. With good management practices quite a good number of farmers are getting FFB yield of 30 to 40 t/ha/year. However, in West Godavari District of Andhra Pradesh, the average FFB yield is 18 t/ha/year. The Oil Extraction Ratio (OER) of Indian Palm is around 16 % to 16.5 % and that of Malaysia and Indonesia is nearly 20%. Unlike other countries, Oil Palm plantations in India are raised under irrigated conditions and the major challenge is water. Farmers often suffer from lower yields due several other inter-linked issues. Additionally, there are social concerns about the situation of workers on account of illiteracy and lower level of awareness. In context of domestic oil palm production and its expansion in identified areas, the sustainability concerns related to maintaining bio-diversity, environment and social challenges of oil palm production needs to be addressed adequately.

Key challenges related to Oil Palm production in India are given below:

Utilization of Natural Resources

Land, water and energy are the major resources which are to be managed in an integrated way for sustainable development, since India has only 2% of the global land, 4% of water but 16% of the population of the world. At present, land use is not effectively regulated and is under use without considering any integrated planning. The natural resources are being used at a comparatively faster rate as is evident from the last decade, due to increased economic activity. It requires careful and integrated management of these scarce resources for sustainability of Oil Palm sector in India.

Production of palm oil in India continues to be at a meagre level with respect to its actual requirement. The falling productivity is being caused by several interlinked factors - low productivity of land due to imbalanced use of chemical fertilizers, water scarcity, poor extension and advisory services, declining public investment in agricultural research and lack of infrastructure etc.

IRRIGATION REQUIREMENT: According to estimates of National Commission on Integrated Water Resources Development (NCIWRD), the demand for irrigation is 557 bcm during 2010 and would go higher up by 511 b cm (2025) and 807 b cm (2050). Rationalisation of irrigation water with micro-irrigation coupled with mulches and fertigation have to be practiced.

LAND REQUIREMENT: India has a total geographical area of 328.2 M ha with a cultivated area of 142 million ha. Since land resources are finite, requisite measures are required to reclaim degraded and wastelands, so that areas going out of cultivation due to social and economic reasons are replenished by reclaiming these lands and by arresting further loss of production potential. (ICAR- Degraded and Wastelands of India)

The efficiency of water use for irrigated agriculture is 35% to 40% at present, which could be increased to at least 60% to 70% with better management and operation. If the net irrigated area is restricted to 65 million ha and the cropping intensity increased from 135% to 150%, then a production of about 280 million tonnes of food grains with an average productivity of 4 tonnes/ ha could easily be achieved. In rain fed areas, which at present have a productivity of about 1 ton per ha, this could be increased to 2.5 tonnes per ha with the production of 175 million tonnes. Thus, the total production could be 455 million tonnes in 2050. The area sown at present is 142 million ha, which should not be allowed to be decreased. Oil Palm required only less extent of land and only 0.26 ha is required for producing 1 ton of oil while soya requires 2.2ha, sunflower 2.0 ha and Rape seed and mustard 1.52 ha.

Sustainable Production System Management

India's vegetable oil consumption level still continues to be below the dietary requirements. With increase in per capita income and accelerated growth of population, demand for vegetable oil will increase progressively, which will call for more production. But the production has to be competitive both in terms of quality and price.

Adequate steps are to be taken to ensure that the country becomes self-sufficient in edible oil and oilseeds production. In this task, oil palm could play a major role in view of its high productivity potential. For achieving the target, it has to be ensured that the Government programmes are adequately strengthened along with measures for improving productivity in different parts of the country. Concurrently, efforts for improving the productivity of oil palm as well as from other oilseed crops are also to be intensified. Effective monitoring system and commitment by the government, and sincere involvement of stakeholders will improve the present situation.

Key important practices for improving domestic production

MANAGEMENT OF ABIOTIC STRESSES: For perennial crops like oil palm, emphasis is required to be given on soil moisture deficit management. It is required to promote agro techniques/practices and productive use of water to get "More crop per drop" by increasing the water and nutrient use efficiency. Integrated irrigation and Plant Nutrient Management (IPNM) for oil palm based cropping /farming system needs to be promoted with major emphasis in bio-mass waste recycling process.

Management of Adverse Effects of Climate Change: Oil palm is likely to be more vulnerable due to excessive use of natural resources particularly water with poor adaptive mechanisms. Oil palm is highly sensitive to moisture stress and is strongly affected by climatic anomalies such as El Nino in South East Asia. Under such extreme climatic situations, when FFB yield level in oil palm decreases, farmers would be most affected. Hence, the consequences of climate change on oil palm could be severe on livelihood security of the poor in the absence of proper mitigation strategies. Thus, it is required to promote climate resilient technologies for ensuring better adaptation to climate change and improving productivity.

Integrated Soil Health Management: New agronomic practices based on precision farming with zero tillage, recycling organic residues available in the plantations and micro irrigation/fertigation techniques are to be strengthened. These practices needs to be promoted to ensure better Resource Use Efficiency for land, water, fertilizers and chemicals.

Suitable farm tools and systems: It is also required to develop suitable harvesting tools for oil palm production and post-harvest technologies to improve product quality, mechanization in plantations and minimize environmental impact. Also, it is needed to develop advanced treatment systems for palm oil mill effluent. Additionally, Oil Palm labourers needs to be trained for efficient and safe harvesting skills and technologies.

QUALITY PLANTING MATERIAL: While it is required to put emphasis on achieving self-sufficiency in quality planting material production of improved hybrids for fulfilling domestic requirement, it is also necessary to import high yielding compact planting materials available elsewhere for some time till we are ready with our own materials. Development of improved hybrids is needed with high quality characteristics, productivity and resistance to biotic and abiotic stresses.

Integrated Pest and Disease Management: Integrated Pest Management practices need to be promoted for major pests. It is also required to improve pollination efficiency for better productivity. For rapid, accurate and cost effective detection of high impact diseases, new and innovative diagnostic techniques are also required.

Bio-control agents need to be promoted in oil palm plantations. Further refinement is required for better dispensing systems for the pheromones and development of temperature tolerant strains of biocontrol agents for improving the bio-efficacy of natural enemies.

DIVERSIFICATION OF CROPPING SYSTEMS: Practices for diversification in cropping system with oil palm as the base crop needs to be promoted. Oil Palm-livestock integration with reference to ecology, crop and season could also be promoted.

Inter Cropping and Mixed Cropping: Inter cropping should be promoted especially during the juvenile phase of oil palm. The choice of crop is varied with geographical location and local preference. The crops with complementary effect rather than competitive effect can be selected for successful inter cropping in oil palm plantations.

Converting Waste into Wealth: Oil palm generates huge quantity of biomass like fronds/leaves, male inflorescence, empty bunches etc. can be used for mulching with the help of appropriate equipment/tools such as chaff-cutters to conserve soil moisture and improve soil health.

In oil palm processing units, no waste or effluent is to be permitted to go outside the factory and the entire quantity of by-products should be used through a number of value addition enterprises and all the final wastes including Palm Oil Mill Effluents (POME) from the processing units are to be utilized to produce methane, which can be captured and stored to generate electricity, that could be sold to the national grid. These additional enterprises would enable mills to considerably reduce the cost of crude palm oil, concurrently increasing the price of FFB being offered to the farmers.

Improving Oil Extraction Ratio: Oil extraction ratio in India needs to be improved through the use of mentioned optimum production practices and mill management practices. Harvesting at proper maturity, short fruit bunch, collection of loose fruits etc. will increase OER. Farmers to be trained on this aspect

Integrated Development of Oil Palm in North Eastern Region:

- An area of 2.23 lakh ha has been identified potential for Oil Palm cultivation by Dr. Rethinam Committee in NE states.
- All NE States are covered under NMOOP for Oil Palm cultivation. Presently, four states namely Mizoram, Assam, Arunachal Pradesh and Nagaland are implementing the programme.
- In the state of Mizoram, more than 25,741 ha area has been achieved under Oil Palm cultivation whereas Mizoram has potentials of expansion of Oil Palm plantation to about 35,259 hectares.
- Similarly, Arunachal Pradesh has a potential of nearly 25,000 hectares for Oil Palm plantation. Assam too offer good potential for Oil Palm plantation.
- Feasibility study conducted by Government of India jointly with The Solvent Extractors Association of India, reveal huge potential for expanding Oil Palm plantations in NE region. The study undertaken by Indian Institute of Oil Palm Research advocates for need of research programmes, ensuring availability of planting material on subsidy along with other inputs and creation of link roads/infrastructure etc.

Enabling Policies for Sustainable Domestic Production

Adequate policy support from Central and State Governments would create an enabling environment for sustainable domestic production of oil palm.

I. Looking at the global experience in oil palm, especially in Indonesia and Malaysia, where both the household farmer model as well as corporate model of oil palm farming are practiced, it would be good for India too, to experiment with both models. Oil Palm should be declared as plantation crop and there should be relaxation in land ceiling norms so as to create scope for the corporates for large scale captive plantation in oil palm, so that corporates can lease land on longer term basis and internalize costs of production and processing of FFBs. This would give them better cushion to weather external shocks of global prices. Given the financial and managerial strength of the corporate sector and higher capacity to undertake risks, this model may take off even faster than the household model alone.

II. Price fluctuation has been a major issue affecting the profitability of farmers, which in the past compelled them to cut their oil palm plantations. The declaration of appropriate minimum support price for FFB and create Price Stabilisation Fund to meet price fall may not only facilitate farmers to continue with the oil palm cultivation, but also promote other farmers to go for new plantations. Price fixing formula can be reworked based on the farmers' situation. Creation of Price stabilization fund can be one of the best options to maintain the price of FFB. Presently marketing of FFB is well organized, this set up only to be continued.

III. Dedicated oil palm authority required for overall development of oil palm in India. The agency should be responsible for all aspects of oil palm (development, extension, policy preparation, enforcement etc.) in the country. Rubber Board is a typical example which was responsible for making India the biggest producer of natural rubber with highest productivity.

IV. Indian industries advocate for fair differential in import duty on Crude Palm Oil (CPO) and Refined Palmolein Oil (RBD) which will give sufficient protection to Indian farmers and vegetable oil refining industries in India. It is advised by stakeholders to keep the duty differential between RBD and CPO at a minimum 15% to promote edible oil processing in India.

Imported Palm Oil and Sustainability Perspective

India is the largest importer of palm oil in the world. Palm oil (mainly imported) and soybean oil (partly imported) accounted for almost half of the total edible oil consumption in India, followed by mustard and groundnut oil.

Consumption of Palm oil in India is now nearly 45% of the total oil consumption followed by Soybean oil and Rapeseed oil. The gap between demand and supply is expected to widen further as production is unlikely to keep pace with India's growing population, rising incomes and consumption levels. The ever-increasing demand for edible oil and statistics on imported palm oil and domestic consumption in supplementing the national requirement foretells that the crop will continue to play a pivotal role in oil economy of India.

Major challenges constraining indian palm oil industry from becoming more sustainable are summarized below:

- I. Price Sensitivity and Change in Import-export Regulations
- II. Enabling Policy Environment
- III. Supply Chain Complexity
- IV. Low capacity utilization of domestic refining units

I. Price Sensitivity and Change in Import-export Regulations

Any change in import duties by the Indian government drive up edible oil prices and pull down domestic consumption of edible oil, as consumers are price-sensitive. Similarly, any increase in duties levied by exporting countries (Indonesia and Malaysia) for palm oil also make edible oil pricier for Indian edible oil manufacturers, thereby impacting demand. The fluctuation in global demand and supply of edible oil markets, mirrored by demand and supply within the domestic market, aggravates price sensitivities in local trading market. This means that there is an easy substitution between different edible oils based on their price differentials. The increased demand for palm oil for local consummation creates a competitive market in which price sensitivity takes precedence over sustainability concerns. In addition, there are other constraints such as with low local demand for sustainable palm oil. The market for sustainable palm oil need to be developed.

II. Enabling Policy Environment

If palm oil producing countries wish to promote the export of sustainable palm oil, it must rectify its export tax structure. To encourage import of certified sustainable palm oil by India and other developing countries producing countries must review the export policies and tax rates. This would not only create demand but will also encourage palm oil farmers in Indonesia and Malaysia to produce sustainable palm oil. There should be a joint council between Indonesia, Malaysia and India to review and address policy issues.

III. Supply Chain Complexity

There are issues related to lack of ownership and an unwillingness to evolve to sustainable palm oil and its products because of complexity of supply chain and most of the palm oil is sold unbranded in India.

IV. Low Capacity Utilization of Domestic Refining Units

The Indian vegetable oil industry has been suffering for the last three years due to the minimal duty difference between crude and refined palm oil. The lower difference has added advantages for refining industries in Indonesia and Malaysia for export of refined palm oil. This adversely affects the capacity utilization of domestic vegetable oil refining industries.

It is expected that the collective and coherent efforts of stakeholders in the direction of promotion of sustainable production and trade along with enabling policies will go a long way in promotion of sustainable palm oil sector in India.



National and International Sustainability Standards

There are a number of voluntary and mandatory standards that apply to palm oil. Certification standards, such as Roundtable on Sustainable Palm Oil (RSPO), establish common commitments and guidance for growers and lend credibility to their claims on the sustainability of their operations, therefore, providing assurance to buyers and investors.

Of late, several stakeholders of oil palm sector could realise that Palm Oil industry must necessarily look into and settle the social and environmental issues linked with its non-sustainable practices. Different sustainability certification schemes are being developed and promoted through national initiatives and multi-stakeholder engagements.

Indonesia and Malaysia developed their national sustainability standards i.e. Indonesian Sustainable Palm Oil (ISPO) and Malaysian Sustainable Palm Oil (MSPO) for production of certified sustainable palm oil. These standards are paving way to emulate the process by other oil palm growing nations to strengthen sustainable palm oil supply chain. These are auditable standards that set down the sustainability principles, criteria and principles; and compliance is verified through the process of certification. The standards are designed to address constraints and reflect local realities with focus on smallholder development, reducing emission of greenhouse gasses and draw attention to amicably tackle the environmental issues.

In 2011, Government of Indonesia, introduced The Indonesian Sustainable Palm Oil (ISPO) standard. Based on the Indonesian legislation, ISPO aims to improve sustainability and competitiveness of Indonesian palm oil industry, while contributing to the government's commitments to reducing greenhouse gas emissions. ISPO criteria are strongly aligned with existing legal and regulatory requirements. Because of its national reach, ISPO offers potential for improving the entire Indonesian plantation industry. Ministry of Agriculture has set a target for mandatory ISPO certification by 2022 for smallholders.

Malaysia being the second largest palm oil producing country, the total area of oil palm plantation in Malaysia is currently 5.74 million hectares (MPOB,2016). The Malaysian Sustainable Palm Oil (MSPO) is National sustainability standard which is applicable to all categories of industry i.e small, medium and large. The Malaysian Palm Oil Board (MPOB) is the founding body for MSPO. MSPO is being introduced to ensure that all oil palm groups can be sustainably certified. Standard complies with Malaysian laws and ratified international agreements/conventions. The MSPO provides general principles for the implementation, establishment and improvement of the operational practices of sustainability. MSPO principles are based on four parts that are general principles, principles for independent smallholders, principles for plantations and organized smallholders and principles for mills. The certification procedure needs to be adhered in order to be sustainably certified. The national standards such as ISPO and MSPO are based on a series of legal and technical regulations set by the government at national level and was developed in consultation with the relevant stakeholders.

It is important that producers, buyers, governments, private sector and Civil Society of India, Indonesia, Malaysia and China must "align" their perspective and engage in dialogue on sustainable oil palm in Asia. The chances of aligning national standards from the four countries are higher because of recognition of national governments as well as national stakeholders than multi-stakeholder processes. National initiatives/frameworks could potentially support to sustainable production and trade with conserved and enhanced environmental quality.

Indian Palm Oil Sustainability (IPOS) Framework

In spite of the fact that the Oil Palm existed in India for over 50 years and is known for its far higher oil yielding capability as compared to some of the field oilseeds, its commercial cultivation did not pick up in the past. Due to the increasing need for edible oil and the exchequer on import of edible oils from other countries, it started receiving due attention from the Government of India and the Oil Palm Development Programme was initiated.

The experience over years in India and from other oil palm growing countries revealed that its cultivation contributed significantly towards the socio-economic development of producers, with special concerns over the sustainability of production and trade, particularly with regard to social and environmental impacts.

As in India, it is smallholders' crop and at present they cannot afford to invest on much of the required resources. Furthermore, there is price fluctuation, lack of minimum /support price, lack of dedicated agency for all-round development of oil palm. Additionally, there is need for strong enforcement of laws and regulations. Moreover, Indian market is highly price sensitive, thus it takes precedence over sustainability concerns, as palm oil is mostly consumed by low income group/populations in India. These concerns lead to origin of sustainability standards and efforts to address the related issues. There is a dire need to relook on approaches that can harmonize multi-disciplinary functioning for resolving the problems with special focus on key sustainability issues, profitability and issues related to trade. The collective and coherent efforts in the direction of promotion of sustainable practices as collective responsibilities of stakeholders along with the adequate policy support from Central and State Governments will go a long way in promotion of sustainable cultivation of oil palm.

IPOS encompasses 6 principles coupled with 20 criteria and 76 Indicators as shown below.

Principle	Criteria	Indicators
Principle 1. Overall continuous improvement and transparency	3	7
Principle 2. Compliance with legal requirements and laws	4	10
Principle 3. Good Plantation Practices	4	15
Principle 4. Good business practice and commitment to long-term economic and financial viability	2	5
Principle 5. Responsible community relations, fair labour and employee conditions	3	21
Principle 6. Conserve, protect and enhance natural resources, Environment, Bio-diversity and Ecosystem	4	18

Indian Palm Oil Sustainability (IPOS) framework is comprised of legal, economically viable, environment friendly and socially beneficial practices and management for sustainable oil palm production and trade. This would be delivered through a set of Principles, Criteria and accompanying Indicators and Guidance. The IPOS defines the standards for environmental and socio-economic aspects in production, trade and demand for sustainable palm oil. It defines Indicators and Guidance for each criterion. Each Indicator has a specific objective, evidence that shall be in place to demonstrate/verify that the criteria is being met. Guidance consists of helpful information to help farmers/millers/auditors to understand what the Criteria/Indicators mean in practice, to indicate good practices and practices that should be followed. Specific guidance has also been included for certain Indicators for clarity.

Principles, Criteria & Indicators of Indian Palm Oil Sustainability (IPOS) Framework

PRINCIPLE 1. OVERALL CONTINUOUS IMPROVEMENT AND TRANSPARENCY

Criteria	Indicator	Guideline	Supporting documents
<p>Criteria 1: Continual Improvement:</p> <p>Ensure continuous improvement through action plans and monitoring compliance with national laws, regulations and framework also with mid-term correction, if needed. When majority of small holders/ stakeholders experience difficulties in complying with the provisions in the framework, these should be brought to the notice so that joint solutions can be worked out.</p>	<p>Indicator 1. Action plan for the aspects of planting, replanting and mill management which have social and environmental impact should reflect continual improvement;</p> <p>Indicator 2. Processors and ICS team should establish the system to align their practices with available and feasible new/improved practices/ technologies/information including action plan to provide required resources to implement improved practices.</p>	<ul style="list-style-type: none"> • Continual improvements, action plans based on social, environmental impacts and review and monitoring annually; • Established system to assess the feasibility of new/ improved practices/ technologies/information for adoption; • Training plans and programmes for relevant personnel involved in the implementation of new technologies; demonstration plots Stakeholders consultations regarding their social and environmental concerns and improvement plans; Resource allocations for implementation. 	<ul style="list-style-type: none"> • Plans for social and environmental impact assessment and feasibility reports of new practices for required changes in current practices; • Action plan for continual improvement with timeline; • Monitoring mechanism to ensure the effectiveness of measures adopted for mitigation and based on this the plan and measures should be reviewed in every three years; • Records of training programmes and evaluation on effectiveness of training programme; • Properly maintained list of stakeholders and recorded concerns; • Records of activities performed for facilitating adoption of improved practices and new technologies/ techniques/ information; • Stakeholders concerns and action taken on inputs received from stakeholders. • Records of results (yields, production cost, OER etc.)

Criteria	Indicator	Guideline	Supporting documents
<p>Criteria 2. Transparency in terms of documents and information relevant to framework</p>	<p>Indicator 1. The management shall facilitate access to adequate information related to sustainable practices and social, environmental and legal issues to relevant stakeholders in language understandable by them</p> <p>Indicator 2. Relevant documents/ information related to social and environmental impacts should be publically available unless it is prevented by commercial confidentiality;</p>	<ul style="list-style-type: none"> • Requests and responses must be recorded 	<ul style="list-style-type: none"> • Records of requests and release of information, communications, consultations and responses; and • List of publically available documents • Occupational health and safety plans • Continual improvement plans • Impact assessment plan relating to social and environmental impact • Public summary of internal audit report • Human Rights policy • Records of complaints and grievances.
<p>Criteria 3. Transparent method of communication</p>	<p>Indicator 1. Establishment of communication and consultation procedures with relevant stakeholders;</p> <p>Indicator 2. Management to nominate a responsible officer at operating unit for issues related to communication and consultations with relevant stakeholders;</p> <p>Indicator 3. Proper documentation of records of consultations, stakeholders, communication and action taken from consultation.</p>	<ul style="list-style-type: none"> • Set-up the procedures for stakeholders' communication and consultations; • The responsible officer nominated by the management will be required to keep the records of consultations, and communications with stakeholders and will keep all the stakeholders abreast with them. He will also record the action taken and outcome of the consultations. 	<ul style="list-style-type: none"> • Documented procedure for consultation and communication; • Records of communication and consultations, requests and responses and list of stakeholders; • Appointment letter of responsible person for framework activities and matters; Verified records for appropriateness and effectiveness of the action taken, follow-ups.

PRINCIPLE 2. COMPLIANCE WITH LEGAL REQUIREMENTS AND LAWS

Criteria	Indicator	Guidance	Supporting documents
<p>Awareness of and compliance with, all local, state, national and international laws and legislations</p> <p>Criteria 1. Demonstrable awareness of responsibilities according to applicable laws and regulations; and</p> <p>Criteria 2. Compilation and documentation of applicable laws along with monitoring.</p>	<p>Indicator 1. All the operations to abide in compliance with applicable local, state, national and ratified international laws as well as regulations;</p> <p>Indicator 2. All relevant laws related to their operation are followed by the management to find the place in legal requirements register;</p> <p>Indicator 3. The updating of legal requirements documents should commensurate with future amendments and documentation of newer regulation coming into force;</p> <p>Indicator 4. The management should exclusively vest the responsibility to a person to ensure compliance and to track and update the changes in regulatory requirements.</p>	<ul style="list-style-type: none"> • The list of applicable laws (references/links) is attached as Annexure I keeping the stake holders informed and for compliance; • Processors/ Farmer groups and other stakeholders need to use appropriate tools/methods like website, leaflet, wall painting, trainings/meetings etc to make information available to producers; • The processors / farmers groups are required to keep the list and required documents related to applicable laws (Register of Laws); and • The management/ responsible officer will keep an eye on any amendment in prevailing laws and will bring the amendments to the notice of all the stakeholders. The responsible person will be ensuring the compliance of provisions in applicable laws. 	<ul style="list-style-type: none"> • Internal document system: • Legal requirement register • Updated licenses, permissions • System to track changes and amendments in laws • Records of legal documents/processes followed • Site inspection for monitoring compliances with the applicable laws
<p>Criteria 3. Legal use rights to the land are clearly defined and demonstrable</p>	<p>Indicator 1: There exists a documented evidence of rights to use the land (e. g. ownership document, rental agreement, court order, etc.).</p>	<ul style="list-style-type: none"> • Any one of the land documents enumerated below needs to be available at current producer level. <p>A) Bhu-Adhikaar Patra and Rinn-Pustika (Land Ownership Document and Loan booklet) like Andhra Pradesh: http://apland.ap.nic.in or Karnataka: www.bhoomi.karnataka.gov.in or,</p> <p>B) Form B-1 (release on yearly basis) or,</p> <p>C) Electronic print out from website (State Govt.- Revenue Department);</p>	<ul style="list-style-type: none"> • Either of the following land documents as indicated in Indicator 1 should necessarily be available at producer level as evidence of land ownership and will be ensured by the management

Criteria	Indicator	Guidance	Supporting documents
	<p>Indicator 2. The documents showing legal ownership or lease, history of land tenure and the actual legal use of the land shall be made available as evidence;</p> <p>Indicator 3. Legal perimeter boundary markers should be clearly demarcated and visibly maintained on the ground, wherever feasible</p>	<p>In case when the land is in parent/spouse's name and the legal heirs are the current producers; an undertaking from parent/spouse to establish the current land use/cultivation can be treated as valid; and</p> <p>In case when the land is in parent/spouse's name and the legal heirs are the current producers; an undertaking from parent/spouse to establish the current land use/cultivation can be treated as valid; and</p> <p>In case of Share-cropper, the notarized agreement is the acceptable legal document.</p>	
<p>Criteria 4. The legal rights in areas use of land for oil palm not to diminish the legal or customary rights of other users unless their free, prior and informed consent is obtained.</p>	<p>Indicator 1. It should be ascertained by the management that their oil palm plantation/milling activities do not diminish the land use rights of other users;</p> <p>Indicator 2. In disputed cases, documented proof on legal acquisition of land title after paying fair compensation to previous owners and occupants to be made available and need be accepted with Free Prior Informed Consent (FPIC); and</p> <p>Indicator 3. If lands are burdened by customary rights, it has to be demonstrated by the company that these rights have been understood and are not being threatened or reduced.</p>	<p>Diminishing of land use right due to plantations and milling activities may be avoided in totality while implementing the sustainable programme.</p>	

PRINCIPLE 3. GOOD PLANTATION PRACTICES

Criteria	Indicator	Guidance	Supporting documents
<p>Criteria 1. The outlined Best Management Practices (BMPs) leads to sustained optimum yield along with conservation of natural resources and biodiversity and efficient use of external resources proven techniques to maintain soil quality (physical, chemical and biological) are implemented.</p> <p>Proven techniques to control soil erosion is demonstrated are implemented.</p>	<p>Indicator 1. The outlined and documented GMPs, implemented and monitored to establish sustainable optimum yields;</p> <p>Indicator 2. Records of GMPs followed by farmers is being maintained and monitored;</p> <p>Indicator 3. Periodical monitoring of soil and leaf analysis based on scientific recommendations to be done and record be maintained;</p> <p>Indicator 4. Ensuring availability of promising planting material for new plantation/re-plantation and maintenance of records thereof;</p> <p>Indicator 5. Soil quality is maintained or improved and erosion is avoided by good management practices;</p> <p>Indicator 6. The plans and package of scientific practices for water use efficiency and irrigation water management to be documented, implemented and monitored in view of efficient water use and long-term availability of surface and ground water.</p>	<ul style="list-style-type: none"> • The management should make documented GMPs plan for achieving optimum yield available to producers and ensure their implementation; • Producers should keep the record of GMPs adopted and records of fertilizers and chemicals, which could be monitored at any point of time; and • Soil and palm leaf analysis for keeping watch on improvement of soil quality and appropriate palm nutrition. Management strategy shall be in place for fragile soils • For establishment of new plantation, the stakeholders (research organizations/processors) should guide the producers to access to promising planting material for plantation. • Producers should ensure regular incorporation of organic resources and integrated approach for plantation management with the support of knowledge partners in the sustainable programme. • Already developed plan indicating the measures of natural resources conservation (particularly land, water and natural vegetation) should be made available to producers for implementation and this could be periodically monitored. 	<ul style="list-style-type: none"> • Individual farmers' diaries are maintained at farmers' level; • Documented GMPs and records of fertilizers and chemical inputs; • Documents with data on monitoring indicators like soil organic matter content, soil reaction, leaf analysis etc.; and • Documented evidences of adoption rates of GMPs, yield improvements and reduction in environmental impacts • Records of planting material • Soil health map/record shall be available and shall be updated/reviewed in every 3-5 years; • Documented evidences of adoption of water use efficiency practices.

Criteria	Indicator	Guidance	Supporting documents
	<p>Indicator 7. Water consumed per ton production of Fresh Fruit Bunches (FFB) shall be monitored as a measure of efficient water use; and</p> <p>Indicator 8. Implementation of good plantation management practices to diffuse localized impacts on surface and ground water quality from chemical residues, minimizing health hazards from use of agro-chemicals and contain soil erosion to minimize the degradation of soils</p> <p>Indicator 9. On-farm biodiversity is maintained and safeguarded through the preservation of native vegetation.</p>	<ul style="list-style-type: none"> • Producers are to keep the record of agro-chemicals utilized in the plantation and ensure non-use of those banned by the national and international laws; • Producers should use integrated crop management approach as in BMPs keeping the need based use of agro-chemicals; • Producers are also to keep the record of bio-agents utilized to containing abiotic and biotic stresses, which will indicate lessening the load on dependence on chemicals; • Producers should adhere to safe storage, use and disposal of left over chemicals/ pesticide containers as recommended. The protective measures related workers' safety in use of pesticide to be ensured by the producers; and • Producers should get the soil analyzed for simple parameters like nutrient content, organic carbon, pH, etc. to monitor the improvement in soil health. 	<ul style="list-style-type: none"> • Records of irrigation water applied to produce a ton of FFB is to be generated to keep watch on water use efficiency by the producer. • Records of (i) chemical products purchased and applied to plantation, safety measures taken by persons during application of chemicals, safe storage and disposal of pesticide leftover/ pesticide containers are kept; • Fertilizers used as per scientific recommendations and non-use of restricted agro-chemicals as listed in the Stockholm and Rotterdam Conventions and under national regulations; • Maintenance of records on the use of scientifically recommended biological control agent; • There is a map of the farm which shows the native vegetation. • There is a plan, which is being implemented, to ensure that the native vegetation is being maintained • No hunting of rare, threatened or endangered species takes place on the property.

Criteria	Indicator	Guidance	Supporting documents
<p>Criteria 2. Sustainable expansion and development of new plantation</p>	<p>Indicator 1. Assessment shall be undertaken for potential effect on hydrology, watercourses and land. Baseline should be done for soil status, topographic information, area prone to erosion, degradation and analysis of current land use patterns. Also the social and environmental impacts shall be assessed. Mechanism and measures shall be planned and implemented for maintaining the quality of water, land and environment and better social conditions.</p> <p>Indicator 2. There shall be no land preparation by burning</p>	<p>The assessment shall be done in cluster basis</p>	<ul style="list-style-type: none"> • Records of cluster-wise assessments undertaken on social and environmental aspects; • Package of measures to address the possible negative impacts and records of implementation; • Review the baseline after 3-5 years of plantation
<p>Criteria 3. Natural vegetation areas around natural watercourses are maintained or re-established.</p>	<p>Indicator 1. Mapping of all watercourses and perennial vegetation as base information and subsequent interventions to maintain/enhance status to be properly documented</p>	<ul style="list-style-type: none"> • The stakeholders should plan and implement to maintain/re-establish/ plant natural vegetation along the natural water courses • Where natural vegetation in riparian areas has been removed, a plan has been implemented and after 5 years at least 30 % has been recovered; and • In cases of perennial streams, the size of the riparian strip should be double the width of stream; and • Appropriate measures (like plantation, guide bund, vegetative barrier) need to be suggested to concerned producers. 	<ul style="list-style-type: none"> • Plan for management of riparian buffer zones and implementation

Criteria	Indicator	Guidance	Supporting documents
Criteria 4. Implementation of integrated plantation management techniques to avert adverse impact on environment and human health	Indicator 1. Documentation on pests (insects, diseases, weeds) and natural predators are maintained and implementation of integrated pest management plan to promote minimized use of unbanned chemicals as per national legislation or internationally.	<ul style="list-style-type: none"> • Integrated Pest Management guidance should be provided to producers and they should follow the integrated pest management plan to avoid the adverse impact on environment. 	<ul style="list-style-type: none"> • Documentation on pests (insects, diseases, weeds) and natural predators are maintained; and invoices/ records of chemicals used. • Documented implementation plan/practices to reduce use of potentially harmful phyto-sanitary products with passage of time.
	Indicator 2. Implementation plan that contains targets for reduction of potentially harmful phyto-sanitary products with passage of time.	<ul style="list-style-type: none"> • This constitutes the objective of BMPs and record maintenance by producers will evidence it. 	
	Indicator 3. Use of phyto-sanitary products meeting legal requirements and with professional recommendations and includes rotation of active ingredients to prevent development of resistance in pests & no use of banned pesticides.	<ul style="list-style-type: none"> • Producers are to be made aware on development of pest resistance by repeated and inappropriate use of same pesticide or excessive use of pesticides for pest management, which need be avoided. Producers are to be made aware about the banned pesticides. 	

PRINCIPLE 4. GOOD BUSINESS PRACTICE AND COMMITMENT TO LONG-TERM ECONOMIC AND FINANCIAL VIABILITY

Criteria	Indicator	Guidance	Supporting documents
Criteria 1. Economic and financial viability plan	Indicator 1. Establishment of a documented long-term economic and financially viable business plan; and	<ul style="list-style-type: none"> • The processors should implement, periodically monitor and keep all the relevant records on time scale on financial indicators like cost of raw material, oil extraction ratio, cost of extraction and profit accrued. 	<ul style="list-style-type: none"> • Documented business plans with at-least 3 years of projection; • Documented process of review of business plans and performances/ review reports; and producers' profit and loss statements.
	Indicator 2. Keeping record on effective implementation monitoring and periodical review of the business/ management plan to monitor the achieved objectives. Close monitoring of different trends in yield, costs, oil extraction rate, price forecasts and financial indicators.	<ul style="list-style-type: none"> • Producers should also maintain records of cost of cultivation including labor records as well as returns with statements of profit and loss. 	<ul style="list-style-type: none"> • The business plan may contain: (i). Attention to quality of planting material and FFB (ii). FFB yield trends/crop projections (iii). Price forecasts, (iv). Financial performance indicators

Criteria	Indicator	Guidance	Supporting documents
<p>Criteria 2. Transparent and fair pricing, contracts and processing plants management</p>	<p>Indicator 1. Effective establishment of a documented mechanism for pricing of the products and services and its implementation in true sprits;</p> <p>Indicator 2. The relevant contracts with understandable framework requirement shall be fair, legal and transparent and shall be with the required documentation and information; and</p> <p>Indicator 3. Existence of appropriately documented Standard Operating Procedures for good processing unit management, which are consistently implemented and monitored.</p>	<ul style="list-style-type: none"> • Documented pricing mechanism; • Processors should enter into a documented contract with producers’ technical and working support like timely transportation of their produce in a language understandable by them; and • Where contractors are involved they should be aware about the framework and its requirements. The company shall be responsible for the monitoring of the control points applicable to the contractors 	<ul style="list-style-type: none"> • Documented evidences for pricing mechanism; • The processors should also have documented and legally acceptable Standard Operating Processors encompassing good management practices and ensure their proper implementation; and • The contract agreement shall include the special clause on framework where applicable to them.

PRINCIPLE 5. RESPONSIBLE COMMUNITY RELATIONS, FAIR LABOUR AND EMPLOYEE CONDITIONS

Criteria	Indicator	Guidance	Supporting documents
<p>Criteria 1. Social situation assessment</p>	<p>Indicator 1. Existence of a sound documented system for monitoring and dealing with complaints and grievances;</p> <p>Indicator 2. Child labor, forced labor, discrimination and harassment are neither engaged in nor supported;</p> <p>Indicator 3. Fair wages as per the industry standards and national legislations. Documentation of paid wages and overtime payments on pay slips and shall follow legal requirements and collective agreements. Devoid of gender bias and prescribed working hours;</p>	<ul style="list-style-type: none"> • A documented system for resolving the complaints/ grievances in timely manner should be in place; A wide publicity on complaints/ grievances resolving system is to be given through various appropriate means • Children between 13 and 15 years of age may carry out light productive activities during the peak season, do not work over 14 hours per week and this does not interfere with their schooling; • In case of doubt about the age of workers the auditor can establish evidence from any of these documents: PDS/Ration Card, School leaving certificate, voter ID; • The minimum wages stipulated by national 	<ul style="list-style-type: none"> • Social risk assessment report • Records of labours and wage payments; • Site inspection for assessing awareness among the local community about the complaints and grievances system; • Documented evidence for complaints and grievances; and • Action plans with timeline to address/resolve the received and analysed complaints and grievances.

Criteria	Indicator	Guidance	Supporting documents
	<p>Indicator 4. All the relevant disputes shall be resolved in an effective and appropriate manner within a time limit and shall be acceptable by all the aggrieved parties; and</p> <p>Indicator 5. Creating awareness among the local community and stakeholders about the complaints and grievance system</p>	<p>legislation or sector agreements are adequate to meet basic needs and to be ensured without gender discrimination;</p> <ul style="list-style-type: none"> • Normal daily working hours do not exceed 9 hours excluding lunch/rest hours; • Producers/processors should attend complaints, grievances or doubts in a reasonable term according to their degree of seriousness and/or complexity; • As per Indian law, those processors/ producers who employs 20 or more than 20 workers (including temporary workers) are required to have a written contract, as per THE CONTRACT LABOUR (REGULATION AND ABOLITION) ACT, 1970 ACT NO. 37 OF 1970; • For those cases when the law does not require a written contract, the farmer will keep a record of all the workers including temporary workers; • Non-discrimination on account of gender, race, caste, colour, region, social, original, nationality or any other characteristics to be ensured; • If farmer hire labour for plantation activities, then in this case he/she will not be treated as employer but he will ensure all mentioned good practices 	

Criteria	Indicator	Guidance	Supporting documents
<p>Criteria 2. Fair labour conditions, safety and health</p>	<p>Indicator 1. In force “Occupational Safety and Health Act of India” shall be implemented;</p> <p>Indicator 2. Assessment and documentation of the safety and health risks for employees, labourers and smallholders;</p> <p>Indicator 3. Designing of Standards Operating Procedures for occupational safety and health shall be done including organization of awareness and trainings programmes, preparation of precautionary manuals on safe use of agro-chemicals and safe working & harvesting practices;</p> <p>Indicator 4. In view to prevent all identified risks and hazards, suitable protective equipment for persons to be available at workplace, and they are to be demonstrated among the smallholders;</p> <p>Indicator 5. Accident and emergency procedures shall be in place and instructions shall be clearly understood by all employees. Events of accidents to be recorded and reviewed from time to time;</p> <p>Indicator 6. A person(s), who is aware of national and international legislation, may be assigned the job to take care of workers’ safety and health</p> <p>Indicator 7. Intermittent dialogue with workers/ smallholders with respect to safety, health and welfare issues to be organized and details thereof be recorded.</p>	<ul style="list-style-type: none"> • All the provisions under Occupational Safety and Health Act of India to be implemented in true spirits; • A manual to be prepared on the provisions under above act; • All the provisions under the above act should be brought to knowledge of workers by way of awareness trainings, encompassing safe use of agro-chemicals and safe working practices; • All the protective equipment to avoid health risks need be there in work place with training to small/holders/workers; • In the event of any accident at farm or processing unit to be documented. All the emergency points should have the relevant safety instructions; • Availability of and/ or access to the First-Aid-Kit /initial medical help at village/ processors level need to be ensured. All workers shall be provided with medical care and accident insurance; • Monitoring of safety measures and related issues should vest with an officer with awareness on national and international laws. • Ensure proper implementation, the small holders/ processor should have dialogue with workers intermittently; and • The company shall appoint qualified responsible person (s) for workers’ and producers’ safety and health. 	<ul style="list-style-type: none"> • Visual inspections; • Occupational Safety and Health policy and records of committee, meeting minutes; • Manuals and procedures for safety and health awareness; • Safety risk assessment, periodical reviews and control mechanism; • Annual training programmes/ periodical health check-up camps; Records of PPE issuance and replacement; • Records of accidents and emergency response procedures/reports and it should be reviewed quarterly; • Warning signs- assessed risks; Evidence of qualification of person in-charge of safety and health; • First-aid kits, emergency equipment; and • Records of dialogues/ trainings /practices promoted for awareness among workers and producers for safety and health

Criteria	Indicator	Guidance	Supporting documents
<p>Criteria 3. Better Employment Conditions and Capacity Building</p>	<p>Indicator 1. The established policy for good social conditions based on human rights;</p> <p>Indicator 2. Non- discriminatory and with provision of equal opportunities regardless of race, caste, colour, sex, region, social original, nationality or any other characteristics; policy to protect the rights of women shall be implemented and communicated among all workers and farmers</p> <p>Indicator 3. Maintenance of primary records and fair contracts with all employees including seasonal workers;</p> <p>Indicator 4. Keeping the records of working hours/over time to meet transparency and shall be mutually agreed;</p> <p>Indicator 5. Maintenance of records of different social benefits and welfare for employees;</p> <p>Indicator 6. Established policy to prevent all forms of sexual harassment and violence at the workplace;</p> <p>Indicator 7. Freedom to employees to join trade unions relevant to the industry or organize themselves for collective bargaining in accordance with applicable laws and regulations;</p> <p>Indicator 8: Records shall be available that employees, local community, women and migrant workers have not been discriminated;</p> <p>Indicator 9: All the employees and workers should be appropriately trained based on the training needs, for enhancing skills and required competency and keeping record thereof.</p>	<ul style="list-style-type: none"> • ILO Forced Labour Convention No 29 Abolition of forced labour convention No 105, Equal remuneration convention No. 100 Discrimination (Employment Occupation) Convention No. 111 • The small holders/ processors to ensure non-existence of sexual harassment and violence at workplace to workers and action taken against such cases need documentation. • Workers should be made aware of social benefits and welfare issues by small holders and processors; and • Processors/ smallholders should organize regular training programmes on capacity building of the workers/employee. 	<ul style="list-style-type: none"> • Employment contract of employees and workers; • Signed policy on good social practices, employment, labour and sexual harassment policy; • Guidelines on prevention of sexual harassment at the workplace; • Policy for equal opportunity and non-discrimination and rights of women; • Records of compliance with minimum age for employment; • Records of compliance with minimum wage policy; • Display of working hours at the notice board; • Records of social and welfare activities; • Records of complaints and action taken; • Training need analysis; and • Records of training programmes such as attendance, trainers' details, appropriateness of training, and also on-site assessment

PRINCIPLE 6. CONSERVE, PROTECT AND ENHANCE NATURAL RESOURCES, ENVIRONMENT, BIO-DIVERSITY AND ECOSYSTEM SERVICES

Criteria	Indicator	Guidance	Supporting documents
<p>Criteria 1. Natural Resources Management Plan</p>	<p>Indicator 1. There should be established Natural Resources and Environment Management Policy and Plan, which is to be communicated and implemented abiding by the relevant country and environmental laws;</p> <p>Indicator 2. The established Natural Resources and Environmental Management Plan shall include the policy/objectives, assessment of relevant risks and possible impacts analysis of all operations;</p> <p>Indicator 3. Plans are to be in place to cover up the risks and also possible negative impacts along with its implementation and monitoring. The plan should have the component of continual improvement which promotes the positive impacts; and</p> <p>Indicator 4. Implementation of capacity building and awareness programmes has to be there in the management plan to ensure clear understanding of policy and the set objectives.</p>	<ul style="list-style-type: none"> • A plan to maintain/restore the natural resources and environment should be in place as per prevailing laws. 	<ul style="list-style-type: none"> • Copy of signed environmental improvement policy and plans; • Documented mechanism for assessment of risks and possible impacts; • Monitoring reports on key risk areas and impacts; and <p>Records of training and awareness programmes</p>
<p>Criteria 2. Efficiency in the use of energy and renewable resources</p>	<p>Indicator 1. Base-line values to be set and trends to be monitored within time-frame for efficient and optimum use of non-renewable energy. The assessment plan to be in place to evaluate the improvement in the usage of non-renewable energy (fossil fuel, electricity and energy efficiency) in the operations over the base period;</p>	<ul style="list-style-type: none"> • A sound plan is to be in place to establish the reduction in pollution of natural resources and is to be implemented and monitored to be established; 	<ul style="list-style-type: none"> • Monitoring Records on consumption of non-renewable energy with baseline values observed for at-least 3-5 years; • Annual budget for fuel, electricity etc. compared against the actual usage; and • Records of application of techniques/technologies using renewable energy like use of biodiesel/solar energy etc.

Criteria	Indicator	Guidance	Supporting documents
	<p>Indicator 2. Total direct fossil fuel use over time need be accounted for its volume per hectare and per unit of product for all activities related to oil palm production need be monitored;</p> <p>Indicator 3. Increased use of fossil fuel need be justified. In the absence of justification there should be action plan to reduce use;</p> <p>Indicator 4. If feasible, the processors shall gradually resort to the renewable energy in operation of plant and make efforts to increase efficiency of non-renewable sources.</p>	<ul style="list-style-type: none"> Records of non-renewable energy to be kept and a plan to minimize it has to be documented and should be in place. It should be periodically monitored to establish the improvement. (records from base year and minimum 3 years' baseline value); Energy assessment plans; and Smallholders/processors to ensure the progressive increase in use of renewable energy resources with time. 	
<p>Criteria 3. Pollution and emissions including green-house gases is minimized</p>	<p>Indicator 1. Assessment of all polluting activities and green-house gas emissions, scheduled wastes, solid wastes and effluents and risk of contamination of the environment and watercourses;</p> <p>Indicator 2. Implementation and monitoring of established plans to minimize the identified significant pollutants and emissions;</p> <p>Indicator 3. No burning on any part of crop residues, waste, or as part of vegetation clearance, except under any one of the following conditions: a) Where there is a legal obligation to burn as a sanitary measure; b) Where it is used for generation of energy including charcoal production and for drying crops; c) Where only small-caliber residual vegetation from land clearing remains after all useable material has been removed for other uses;</p>	<p>Internal assessment records shall be accepted;</p> <ul style="list-style-type: none"> Recycling of crop residues is to be promoted and its burning to be totally avoided except as a sanitary measure or for generation of energy like charcoal production; Nutrient recycling strategy shall be in place and may promote use of Empty Fruit Bunches (EFB) and Palm Oil Mill Effluent (POME) Regular incorporation of crop residues and manures in smallholders' field to be encouraged/promoted and recorded along with improvement in soil health as per indicators like soil organic carbon, improvement in water storage in soil, fertility levels and improvement in FBB yield; and 	<ul style="list-style-type: none"> Visual inspection of best practices applied and its documentation; Procedures and management plans for identification of waste produce, monitoring and implementation plan; Availability of water management plans and reports of water quality sampling for incoming and outgoing sources, records of mulching, records of adoption of water management practices; and Riparian buffer zone management plan and its implementation

Criteria	Indicator	Guidance	Supporting documents
	<p>Indicator 4. Opportunities for increasing carbon sequestration through restoration of native vegetation, regular recycling of crop residues and application of organic manures, forest plantations, peat lands and other means are identified;</p> <p>Indicator 5. Adherence to the national regulations for discharge limits of the Palm Oil Mill Effluent (POME) and methods;</p> <p>Indicator 6. No disposal of POME into water courses. If in practice, to be phased out as per national legislations and regulations; and</p> <p>Indicator 7. Existence of established water management plans to retain the quality and availability of surface and ground water. The sources of supply, usage, possible negative impacts and related risks shall be assessed and options to optimize water usage to be resorted to.</p>	<ul style="list-style-type: none"> • For extension of area under oil palm, only agricultural land is being utilized at present. 	
<p>Criteria 4. Efficient and responsible waste management</p>	<p>Indicator 1. Establishment, documentation and monitoring of different waste products as per waste management plan;</p> <p>Indicator 2. Identification of different sources and types of wastes products and their possible direct use or re-cycling them into different useful products; and</p> <p>Indicator 3. Established Standard Operating Procedures for handling of used chemicals that are classified under the scheduled chemicals. Their disposal should as per the national legislations and regulations.</p>	<ul style="list-style-type: none"> • Assessment of waste products and identify the waste products and its sources; • Safe disposal of used pesticide containers; • All used chemical containers used in production/processing must be triple rinsed, punctured and disposed-off as per specified procedure; • Re-used empty containers must be appropriately labeled and only used for spraying purpose. 	<p>List of identified waste products and its sources;</p> <ul style="list-style-type: none"> • Record to utilization of waste/by-products to be kept and monitored periodically to establish the improvement; • Standard Operating Procedure of handling of used chemicals in accordance with regulation; • Mulching for soil moisture retention; • Evidence of zero burning; and • Sufficient distance of landfill form habitation and water contamination • Monitoring records of mill effluent levels and discharge quality in compliance with applicable compliances • Periodical reports on performances under the efficient and sustainable waste management

ANNEXURE-I

Applicable National Laws, Regulations/Act and International Conventions

1. Oil Palm (Regulation of Production and Processing) Act, 2004
2. The Andhra Pradesh Oil Palm (Regulation of Production and Processing) Act, 1993
3. The Telengana Oil Palm (Regulation of Production and Processing) Act, 1993
4. The Karnataka Oil Palm (Regulation of Cultivation, Production and Processing) Act, 2013
5. The Goa Oil Palm (Regulation of Production and Processing) Act, 1998
6. The Mizoram Oil Palm (Regulation of Production and Processing) Act, 2004
7. The Minimum Wages Act, 1948
8. Child Labour (Prohibition and Regulation Act) 1986(Act 25 of 1976 amended by Act 49 of 1987), AMENDMENT ACT, 2016
9. The Central Advisory Committee on Equal Remuneration Rules, 1991
10. Protection of Human Right Act, 1993
11. Equal Remuneration Act 1976
12. The Insecticides Act, 1968 and Rules, 1971
13. The Environment (Protection) Act, 1986
14. Hazardous Waste (Management & Handling) Rules, 1989, Amendment Rules, 2000
15. Air (Prevention & Control of Pollution) Act, 1981
16. Biological Act 2002, Revision 2004
17. Fertilizer Rule and Fertilizer Control Order 1985
18. Irrigation Act 1931, Amended 1945
19. Forest (Conservation) Act 1980 Amended 1988
20. Plant Variety Protection and Farmers' Right Act 2001
21. ILO Conventions Ratified by India (C100, C111, C105, C005, C011, C107)
22. Abolition of Forced Labour Convention No 105
23. The Bonded Labour System (Abolition)Act, 1976
24. Wildlife Protection Act, 1972 (Amendment Act 2013)
25. Discrimination (Employment Occupation) Convention No. 111

26. Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
27. The Water (Prevention and Control of Pollution) Act, 1974. Amended 2003
28. The Trade Unions Act, 1926 Amended 2001
29. The Industrial Employment Act, 1946
30. The Industrial Disputes Act, 1947
31. The Dock Workers (Safety, Health & Welfare) Act, 1986
32. The Factories Act, 1948
33. The Noise Pollution (Regulation and Control) Rules, 2000
34. The Payment of Wages Act, 1936, (AMENDMENT) Act, 2005
35. The Minimum Wages Act, 1948, The Minimum Wages (Central) Rules, 1950
36. Jhum Land Regulation Act, 1947, Regulation III, IV and V 1947
37. The Arunachal Pradesh Anchal and Village Forest Reserve (Constitution and Maintenance) Amendment Act, 1984 (Act No 4 of 1984)
38. Assam Forest Regulation, 1891 (Assam Regulation 7 of 1891) as applied vide Meghalaya Forest Regulation (Application & Amendment) Act, 1973 (Meghalaya Act 9 of 1973)

FRAMEWORK AND ITS RELATION TO BIO DIVERSITY, HABITATS AND ENVIRONMENTAL IMPACT

Bio-diversity

The Gazette of India, Extraordinary-Part II (Section 3, sub section ii), No. 858, April 7, 2016, New Delhi classified *Elaeis guineensis* as Palm (fruit, kernel and seed in serial 377a,b,c, respectively) under items XXI. Plantation crops as tradable commodity.

Habitat and Environment

No adverse effect on habitat and environment has been felt so far. On the contrary, it has created a sort of temporary forest for 25 years contributing change in micro-climatic conditions and greater sequestration of carbon. The high biomass production like leaves, EFB's, dried male inflorescence etc., are being recycled using appropriate technology has led to improvement in soil health.

Applicable National Law, Regulations and Conventions

Act/Law /International Conventions	Key Provisions	Summarizing documents
<p>The minimum Wages Act, 1948 (Act No. XI of 1948)</p>	<p>Under Provision 12/13/14/18</p>	<p>Minimum wages to be paid as fixed by the Central/State Government from time to time. Number of working hours should not exceed 48 hours in a week with a weekly holiday. The daily hours should not exceed more than 9 hours with 1 hour rest interval. Provision of compensatory holiday/ overtime wages if working on holiday. Overtime rates will be twice of the normal wage rate. Employer should maintain the register and records.</p>
<p>Equal Remuneration Act, 1976</p>	<p>Section 4 r/w Section 5</p>	<p>Employer shall pay equal remuneration to men and women workers for performing the same work or work of a similar nature. Employer shall not reduce the rate of remuneration of any worker for the purpose of complying with the provisions of this section. Employer shall not make any discrimination while recruiting men and women and during the period of employment such as promotion, training or transfer and for same work or work of similar nature.</p>
<p>ILO C100 - Equal Remuneration Convention, 1951 (No. 100)</p>	<p>Article 1</p>	<p>a) the term remuneration includes the ordinary, basic or minimum wage or salary and any additional emoluments whatsoever payable directly or indirectly, whether in cash or in kind, by the employer to the worker and arising out of the worker's employment;</p>

Act/Law /International Conventions	Key Provisions	Summarizing documents
<p>ILO C111 - Discrimination (Employment and Occupation) Convention, 1958 (No. 111)</p>	<p>Article 1</p>	<p>(b) the term equal remuneration for men and women workers for work of equal value refers to rates of remuneration established without discrimination based on sex.</p> <p>For the purpose of this Convention the term discrimination includes-</p> <p>any distinction, exclusion or preference made on the basis of race, colour, sex, religion, political opinion, national extraction or social origin, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation;</p> <p>such other distinction, exclusion or preference which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation as may be determined by the Member concerned after consultation with representative employers' and workers' organisations, where such exist, and with other appropriate bodies.</p> <p>Any distinction, exclusion or preference in respect of a particular job based on the inherent requirements thereof shall not be deemed to be discrimination.</p> <p>For the purpose of this Convention the terms employment and occupation include access to vocational training, access to employment and to particular occupations, and terms and conditions of employment.</p>

Act/Law /International Conventions	Key Provisions	Summarizing documents
<p>ILO C105 - Abolition of Forced Labour Convention, 1957 (No. 105)</p> <p>The Child Labour (Prohibition and Regulation) Act, 1986 ,Amendment, 2016</p>	<p>Article 1</p> <p>Part II</p> <p>Section 3 of the principal Act</p>	<p>Not to make use of any form of forced or compulsory labour Forced or compulsory Labour, 1930 (No. 29), is one of eight ILO fundamental conventions of the International Labour Organization. The Convention commits parties to prohibit the use of forced labour, admitting only five exceptions to it. Its object and purpose is to suppress the use of forced labour in all its forms irrespective of the nature of the work or the sector of activity in which it may be performed. The Convention defines forced labour as “all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily”</p> <p>Part II No child shall be employed or permitted to work in any of the occupations set forth in Part A of the Schedule or in any workshop wherein any of the processes set forth in Part B of the Schedule is carried on: Provided that nothing in this section shall apply to any workshop wherein any process is carried on by the occupier with the aid of his family or to any school established by, or receiving assistance or recognition from, Government. (“child” means a person who has not completed his fourteenth year of age or such age as may be specified in the Right of Children to Free and Compulsory Education Act, 2009, whichever is more)</p> <p>The following section shall be substituted, namely: “3. (1) No child shall be employed or permitted to work in any occupation or process. (2) Nothing in sub-section (1) shall apply where the child,— (a) helps his family or family enterprise, which is other than any hazardous occupations or processes set forth in the Schedule, after his school hours or during vacations;</p>

Act/Law /International Conventions	Key Provisions	Summarizing documents
ILO C005 - Minimum Age (Industry) Convention, 1919 (No. 5)	Article 2	Children under the age of fourteen years shall not be employed or work in any public or private industrial undertaking, or in any branch thereof, other than an undertaking in which only members of the same family are employed
The Bonded Labour System (Abolition) Act, 1976	Chapter II: Abolition of Bonded Labour System	<p>On the commencement of this Act, the bonded labour system shall stand abolished any every bonded labourer shall, on such commencement, stand freed and discharged from any obligation to render any bonded labour.</p> <p>After the commencement of this Act, no person shall</p> <p>(a) Make any advance under, or in pursuance of, the bonded labour system, or</p> <p>(b) Compel any person to render any bonded labour or other form of forced labour.</p>
The Insecticides Act, 1968; The Insecticides Rules, 1971- Protection from application of pesticides	Chapter VIII, item 39	<p>Protective clothing 1. Persons handling insecticides during its manufacture, formulation, transport, distribution or application, shall be adequately protected with appropriate clothing.</p> <p>2. The protective clothing shall be used wherever necessary, in conjunction with respiratory devices as laid down in rule 40.</p> <p>3. The protective clothing shall be made of materials, which prevent or resist the penetration of any form of insecticides formulations. The materials shall also be washable so that the toxic elements may be removed after each use.</p> <p>4. A complete suit of protective clothing shall consist of the following dresses, namely: (a). Protective outer garment / overalls / hood / hat; (b). Rubber gloves or such other protective gloves extending half way up to the fore-arm, made of materials impermeable to liquids; (c). Dust-proof goggles; (d). Boots (e). Respiratory devices</p>

Act/Law /International Conventions	Key Provisions	Summarizing documents
The Dangerous Machines (Regulation) Act, 1968	Chapter IV & V	To provide the regulation of trade and commerce in and production, supply, distribution and use of, the product of any industry producing dangerous machines with a view to securing the welfare of Labour, operating any such machine and for payment of compensation for the death or bodily injury suffered by any labourer while operating any such machine, and for matters connected therewith or incidental thereto." This Act applies to the dangerous machines, as defined under the Act, intended to be used in Agriculture or rural sector.
The Protection of Human Rights Act, 1993 [As amended by the Protection of Human Rights (Amendment) Act, 2006–No. 43 of 2006]		Protection of human rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants and enforceable by courts in India.
ILO C011 - Right of Association (Agriculture) Convention, 1921 (No. 11)	Article 1	Convention undertakes to secure to all those engaged in agriculture the same rights of association and combination as to industrial workers, and to repeal any statutory or other provisions restricting such rights in the case of those engaged in agriculture.
The Environment Protection Act, 1986	Chapter III, item 7, Prevention, Control, and Abatement of Environmental Pollution	No person carrying on any industry, operation or process shall discharge or emit or permit to be discharged or emitted any environmental pollutants in excess of such standards as may be prescribed. No person shall handle or cause to be handled any hazardous substance except in accordance with such procedure and after complying with such safeguards as may be prescribed. Where the discharge of any environmental pollutant in excess of the prescribed standards occurs or is apprehended to occur due to any accident or other unforeseen act or event, the person responsible for such discharge and the person in charge of the place at which such discharge occurs or is apprehended to occur shall be bound to prevent or mitigate

Act/Law /International Conventions	Key Provisions	Summarizing documents
<p>The Hazardous Wastes (Management and Handling) Rules, 1989 (as amended, May, 2003)</p>	<p>Schedule 1, 2 and 3</p>	<p>the environmental pollution caused as a result of such discharge and shall also forthwith-- (a) intimate the fact of such occurrence or apprehension of such occurrence; and (b) be bound, if called upon, to render all assistance, to such authorities or agencies as may be prescribed.</p> <p>The occupier and the operator of the facility shall be responsible for proper collection, reception, treatment, storage and disposal of hazardous wastes listed in Schedule 1, 2 and 3</p>
<p>Water (Prevention and Control of Pollution) Act, 1974 amended 1988</p>	<p>Prohibition on Use of Stream or Well for Disposal of Polluting Matter, Etc Section 24:Prohibition on disposal</p>	<p>(a) no person shall knowingly cause or permit any poisonous, noxious or polluting matter determined in accordance with such standards as may be laid down by the State Board to enter (whether directly or indirectly) into any 1 [stream or well or sewer or on land];</p> <p>(b) or (b) no person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or of its consequences.</p>
<p>The Air (Prevention and Control of Pollution)1 Act, 19812 (Act No. 14 of 1981)</p>	<p>Section 21: Consent from State Boards</p>	<p>It is proposed to make it obligatory on the part of a person to obtain the consent of the relevant Board even while establishing an industrial plant.</p>
<p>Environment Impact Assessment Notification ,2006</p>	<p>Schedule : List of Project or activities requiring prior Environmental Clearance</p>	<p>Requirement of environmental clearance before establishment /any industries or operation and process mentioned in the schedule</p>

Act/Law /International Conventions	Key Provisions	Summarizing documents
<p>No Use of Banned Pesticides: Stockholm Convention on Persistent Organic Pollutants (POPs)- All the POPs pesticides are covered under the Insecticides Act 1968 and Rules 1971 of the Ministry of Agriculture, Government of India</p>	<p>Annex A; B and C of Stockholm Convention; Annex III of the Rotterdam Convention</p> <p>Rules 1971; Article 18</p>	<p>No use of POP pesticides listed in of the Stockholm convention in India; Most of the POPs pesticides are banned for manufacture, use and import (some of the chemicals are Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Hexachlorobenze (HCB), Mirex, Toxaphene, DDT) As of now, a total of 47 chemicals are listed in Annex III of the Convention. Out of these, 33 are pesticides and 14 industrial chemicals, which are subject to the Prior Informed Consent (PIC) procedures.</p> <p>Storage of banned pesticide not allowed as per Insecticide act 1968</p>
<p>Forest (Conservation) Act, 1980 (With Amendments made in 1988) Forest (Conservation) Rules, 2003 (With Amendments made in 2004)</p>	<p>PART – C CHAPTER 1 Application of Forest (Conservation) Act, 1980</p>	<p>The term “forest” shall not be applicable to the plantations raised on private lands, except notified private forests. However, felling of trees in these private plantations shall be governed by various State Acts and Rules. Felling of trees in notified private forests will be as the working plan/ management plan duly approved by Government of India.</p>
<p>1.4 Explanation Regarding Non-Forest Purpose</p>		<p>Cultivation of tea, coffee, spices, rubber and palm is a non-forestry activity, attracting the provisions of the Act.</p> <p>(ii) Cultivation of fruit-bearing trees or oil-bearing plants or medicinal plants would also require prior approval of the Central Government except when:</p> <p>(a) The species to be planed are indigenous to the area in question; and</p> <p>(b) Such planting activity is part of an overall afforestation programme for the forest area in question</p>

Act/Law /International Conventions	Key Provisions	Summarizing documents
<p>The Wildlife (Protection) Act, 1972 (No. 53 of 1972) (9th September, 1972)</p>	<p>CHAPTER III Hunting of Wild Animals [(9 Prohibition of Hunting. –</p>	<p>No person shall hunt any wild animal specified in Schedule, I, II, III and IV except as provided under section 11 and section 12. 1] Save, as otherwise provided in this Chapter, no person shall – (a) will fully pick, uproot, damage destroy, acquire or collect any specified plant from any forest land and area specified, by notification, by the Central Government, (b) possess, sell, other for sale, or transfer by way of gift or otherwise, or transport any specified plant, whether alive or dead, or part or derivative thereof : Provided that nothing in this section shall prevent a member of a scheduled tribe, subject to the provisions of Chapter IV, from picking, collecting or possessing in the district he resides any specified plant or part or derivative thereof for his bonafide personal use.</p>
<p>Biological Diversity Act 2002</p>	<p>CHAPTER 4 Some Clarification 4.4 Projects Involving Forest as well as Non-forest Lands. –</p>	<p>It has, therefore, been decided that if a project invites forest as well as non-forest land, work should not be started on non-forest land till approval of the Central Government for release of forest land under the Act has been given</p>
	<p>Chapter II. Regulation of Access to Biological Diversity</p>	<p>3(1) No person referred in sub-section (2) shall, without previous approval of the National Biodiversity Authority, obtain any biological resource occurring in India or Knowledge associated thereto for research or for commercial utilization or for bio-survey and bio-utilization. (2) The persons who shall be required to take the approval of the National Biodiversity Authority under sub-section (!) are the following, namely- (2) a person who is not a citizen of India; (b) a citizen of India, who is a non-resident as defined in clause (30) of section 2 of Income Tax Act1961; (c) a body corporate, asocial or organisation- (i) not incorporated or registered in India; or (ii) incorporated or registered in India under any law for the time being in force which has any</p>

Act/Law /International Conventions	Key Provisions	Summarizing documents
<p>3(1) No person referred in sub-section (2) shall, without previous approval of the National Biodiversity Authority, obtain any biological resource occurring in India or Knowledge associated thereto for research or for commercial utilization or for bio-survey and bio-utilization.</p> <p>(2) The persons who shall be required to take the approval of the National Biodiversity Authority under sub-section (!) are the following, namely- (2) a person who is not a citizen of India; (b) a citizen of India, who is a non-resident as defined in clause (30) of section 2 of Income Tax Act1961; (c) a body corporate, asocial or organisation- (i) not incorporated or registered in India; or (ii) incorporated or registered in India under any law for the time being in force which has any non-Indian participation in its share capital or management.</p>		<p>non-Indian participation in its share capital or management.</p> <p>Eligibility to get rights under the Act is confined to those who “primarily reside in forests” and who depend on forests and forest land for a livelihood. Further, either the claimant must be a member of the Scheduled Tribes scheduled in that area or must have been residing in the forest for 75 years.</p> <p>Title rights - i.e. ownership - to land that is being farmed by tribals or forest dwellers as on 13 December 2005, subject to a maximum of 4 hectares; ownership is only for land that is actually being cultivated by the concerned family as on that date, meaning that no new lands are granted[13]</p> <p>Use rights - to minor forest produce (also including ownership), to grazing areas, to pastoralist routes, etc.</p> <p>Relief and development rights- to rehabilitation in case of illegal eviction or forced displacement; and to basic amenities, subject to restrictions for forest protection.</p> <p>Forest management rights - to protect forests and wildlife</p>
<p>ILO C107 - Indigenous and Tribal Populations Convention, 1957 (No. 107)</p>	<p>Article 3</p>	<p>So long as the social, economic and cultural conditions of the populations concerned prevent them from enjoying the benefits of the general laws of the country to which they belong, special measures shall be adopted for the protection of the institutions, persons, property and labour of these populations.</p> <p>Enjoyment of the general rights of citizenship, without discrimination, shall not be prejudiced in any way by such special measures of protection.</p>
<p>The Industrial Employment Act, 1946</p>	<p>Section 38</p>	<p>Precautions in case of fire.—</p> <p>(1) In every factory, all practicable measures shall be taken to prevent outbreak of fire and its spread, both internally and externally, and to provide and maintain:</p>

Act/Law /International Conventions	Key Provisions	Summarizing documents
<p>The Noise Pollution (Regulation and Control) Rules, 2000</p>	<p>Item 3 and 4</p>	<p>(a) safe means of escape for all persons in the event of a fire, and (b) the necessary equipment and facilities for extinguishing fire. (2) Effective measures shall be taken to ensure that in every factory all the workers are familiar with the means of escape in case of fire and have been adequately trained in the routine to be followed in such cases.</p> <p>The ambient air quality standards in respect of noise different areas/ zones shall be such as specified in the Schedule annexed to these rules.</p> <p>The noise levels in any area/zone shall not exceed the ambient air quality standards in, respect of noise as specified in the Schedule.</p>

ROTTERDAM CONVENTION

The Rotterdam Convention is a multilateral environmental agreement which prescribes obligations on the importers and exporters of certain hazardous chemicals. Parties are empowered to make informed decisions about the chemicals they wish to import. The Convention's objective is to promote shared responsibility and cooperative efforts among parties in the international trade of listed chemicals in the Rotterdam Convention, to protect human health and the environment, and to contribute to the environmentally sound use of chemicals. The Prior Informed Consent (PIC) procedure is the mechanism for formally obtaining and disseminating the decisions of importing Parties, as to whether they wish to receive future shipments of those chemicals listed in Annex III of the Convention and for ensuring compliance with these decisions by exporting Parties. As of now, a total of 47 chemicals are listed in Annex III of the Convention. Out of these, 33 are pesticides and 14 industrial chemicals, which are subject to PIC procedures. The Convention was adopted on September 10, 1998 and entered into force on February 24, 2004. India ratified the Convention on May 24, 2005.

STOCKHOLM CONVENTION

The Stockholm Convention is a global treaty to protect human health and the environment from a class of chemicals known as Persistent Organic Pollutants (POPs). These remain intact in the environment for long periods (persistent), become widely distributed geographically (long range transport), accumulate in the fatty tissue of humans and wildlife (bioaccumulation), and have a harmful impact on human health, or on environment (toxic). Under the Convention, the chemicals can be listed for complete elimination from production, use, export and import (Annex-A), Restriction in use and production for specific purpose only (Annex-B) or Unintentional production (Annex-C). The implementation of the Convention requires the parties to take measures to eliminate or reduce the release of these POPs into the environment. Till date, 26 chemicals are listed as POPs under the Stockholm Convention. As of now, India has ratified only the 12 initially listed POPs. The Convention was adopted on May 22, 2001 and entered into force on May 17, 2004. India ratified the Convention on January 13, 2006.

LIST OF PESTICIDES WHICH ARE BANNED, REFUSED REGISTRATION AND RESTRICTED IN USE (As on 20th October 2015)

I. PESTICIDES / FORMULATIONS BANNED IN INDIA

A. Pesticides Banned for manufacture, import and use

1. Aldicarb (vide S.O. 682 (E) dated 17th July 2001)
2. Aldrin
3. Benzene Hexachloride
4. Calcium Cyanide
5. Chlorbenzilate (vide S.O. 682 (E) dated 17th July 2001)
6. Chlordane
7. Chlorofenvinphos
8. Copper Acetoarsenite
9. Dibromochloropropane (DBCP) (vide S.O. 569 (E) dated 25th July 1989)
10. Dieldrin (vide S.O. 682 (E) dated 17th July 2001)
11. Endrin
12. Ethyl Mercury Chloride
13. Ethyl Parathion
14. Ethylene Dibromide (EDB) (vide S.O. 682 (E) dated 17th July 2001)
15. Heptachlor
16. Lindane (Gamma-HCH)
17. Maleic Hydrazide (vide S.O. 682 (E) dated 17th July 2001)
18. Menazon
19. Metoxuron
20. Nitrofen
21. Paraquat Dimethyl Sulphate
22. Pentachloro Nitrobenzene (PCNB) (vide S.O. 569 (E) dated 25th July 1989)
23. Pentachlorophenol
24. Phenyl Mercury Acetate
25. Sodium Methane Arsonate
26. Tetradifon
27. Toxaphene(Camphechlor) (vide S.O. 569 (E) dated 25th July 1989)
28. Trichloro acetic acid (TCA) (vide S.O. 682 (E) dated 17th July 2001)

B. Pesticide formulations banned for import, manufacture and use

1. Carbofuron 50% SP (vide S.O. 678 (E) dated 17th July 2001)
2. Methomyl 12.5% L
3. Methomyl 24% formulation
4. Phosphamidon 85% SL

C. Pesticide / Pesticide formulations banned for use but continued to manufacture for export

1. Captafol 80% Powder (vide S.O. 679 (E) dated 17th July 2001)
2. Nicotin Sulfate

D. Pesticides Withdrawn

(Withdrawal may become inoperative as soon as required complete data as per the guidelines is generated and submitted by the Pesticides Industry to the Government and accepted by the Registration Committee. (S.O 915(E) dated 15th Jun,2006)

1. Dalapon
2. Ferbam
3. Formothion
4. Nickel Chloride
5. Paradichlorobenzene (PDCB)
6. Simazine
7. Sirmate (S.O. 2485 (E) dated 24th September 2014)
8. Warfarin (vide S.O. 915 (E) dated 15th June 2006)

II. PESTICIDES REFUSED REGISTRATION

S.No.	Name of Pesticides
1.	2,4, 5-T
2.	Ammonium Sulphamate
3.	Azinphos Ethyl
4.	Azinphos Methyl
5.	Binapacryl
6.	Calcium Arsenate
7.	Carbophenothion
8.	Chinomethionate (Morestan)
9.	Dicrotophos
10.	EPN
11.	Fentin Acetate
12.	Fentin Hydroxide
13.	Lead Arsenate
14.	Leptophos (Phosvel)
15.	Mephosfolan
16.	Mevinphos (Phosdrin)
17.	Thiodemeton / Disulfoton
18.	Vamidothion

III. PESTICIDES RESTRICTED FOR USE IN THE COUNTRY

S.No.	Name of Pesticides	Details of Restrictions
1	Aluminium Phosphide	The Pest Control Operations with Aluminium Phosphide may be undertaken only by Govt./Govt. undertakings / Govt. Organizations / pest control operators under the strict supervision of Govt. Experts or experts whose expertise is approved by the Plant Protection Advisor to Govt. of India except 1Aluminium Phosphide 15 % 12 g tablet and 2Aluminum Phosphide 6 % tablet.

S.No.	Name of Pesticides	Details of Restrictions
2	<p>Captafol The production, marketing and use of Aluminium Phosphide tube packs with a capacity of 10 and 20 tablets of 3 g each of Aluminium Phosphide are banned completely. (S.O.677 (E) dated 17thJuly, 2001)</p> <p>Cypermethrin</p> <p>Dazomet</p> <p>Diazinon</p> <p>Dichloro Diphenyl Trichloroethane (DDT)</p>	<p>[RC decision circular F No. 14-11(2)-CIR-II (Vol. II) dated 21-09-1984 and G.S.R. 371(E) dated 20th may 1999]. 1Decision of 282nd RC held on 02-11-2007 and, 2Decision of 326th RC held on 15-02-2012.</p> <p>The production, marketing and use of Aluminium Phosphide tube packs with a capacity of 10 and 20 tablets of 3 g each of Aluminium Phosphide are banned completely. (S.O.677 (E) dated 17thJuly, 2001)</p> <p>The use of Captafol as foliar spray is banned. Captafol shall be used only as seed dresser. (S.O.569 (E) dated 25thJuly, 1989)</p> <p>The manufacture of Captafol 80 % powder for dry seed treatment (DS) is banned for use in the country except manufacture for export. (S.O.679 (E) dated 17thJuly, 2001)</p> <p>Cypermethrin 3 % Smoke Generator, is to be used only through Pest Control Operators and not allowed to be used by the General Public. [Order of Hon,ble High Court of Delhi in WP(C) 10052 of 2009 dated 14-07-2009 and LPA-429/2009 dated 08-09-2009]</p> <p>The use of Dazomet is not permitted on Tea. (S.O.3006 (E) dated 31st Dec, 2008)</p> <p>Diazinon is banned for use in agriculture except for household use. (S.O.45 (E) dated 08th Jan, 2008)</p> <p>The use of DDT for the domestic Public Health Programme is restricted up to 10,000 Metric Tonnes per annum, except in case of any major outbreak of epidemic. M/s Hindustan Insecticides Ltd., the sole manufacturer of DDT in the country may manufacture DDT for export to other countries for use in vector control for public health purpose. The export of DDT to Parties and State non-Parties shall be strictly in accordance with the paragraph 2(b) article 3 of the Stockholm Convention on Persistent Organic Pollutants (POPs). (S.O.295 (E) dated 8th March, 2006)</p> <p>Use of DDT in Agriculture is withdrawn. In very special circumstances warranting the use of DDT for plant protection work, the state or central Govt. may purchase it directly from M/s Hindustan Insecticides Ltd. to be used under expert Governmental supervision. (S.O.378 (E) dated 26thMay, 1989)</p>

S.No.	Name of Pesticides	Details of Restrictions
	Fenitrothion	The use of Fenitrothion is banned in Agriculture except for locust control in scheduled desert area and public health. (S.O.706 (E) dated 03rdMay, 2007)
	Fenthion	The use of Fenthion is banned in Agriculture except for locust control, household and public health. (S.O.46 (E) dated 08th Jan, 2008)
	Methoxy Ethyl Mercuric Chloride (MEMC)	The use of MEMC is banned completely except for seed treatment of potato and sugarcane. (S.O.681 (E) dated 17thJuly, 2001)
	Methyl Bromide	Methyl Bromide may be used only by Govt./Govt. undertakings/Govt. Organizations / Pest control operators under the strict supervision of Govt. Experts or Experts whose expertise is approved by the Plant Protection Advisor to Govt. of India. [G.S.R.371 (E) dated 20thMay, 1999 and earlier RC decision]
	Methyl Parathion	Methyl Parathion 50 % EC and 2% DP formulations are banned for use on fruits and vegetables. (S.O.680 (E) dated 17thJuly, 2001) The use of Methyl Parathion is permitted only on those crops approved by the Registration Committee where honeybees are not acting as a pollinators. (S.O.658 (E) dated 04th Sep., 1992.)
	Monocrotophos	Monocrotophos is banned for use on vegetables. (S.O.1482 (E) dated 10thOct, 2005)
	Sodium Cyanide	The use of Sodium Cyanide shall be restricted for Fumigation of Cotton bales under expert supervision approved by the Plant Protection Advisor to Govt. of India. (S.O.569(E) dated 25thJuly, 1989)

Source: Directorate of Plant Protection Quarantine & Storage, Faridabad

**Stakeholder consultation
at ICAR- Indian Institute of Oil Palm Research
at A.P., India (06 October 2016)**



**Stakeholder consultation for IPOS framework
at Pachmarhi, M.P., India
(21 September 2017)**



Key Contacts: _____

Dr. Suresh Motwani
General Manager

Solidaridad Network Asia
1st Floor, A-5, Shankar Garden, Main Najafgarh Road
Vikas Puri, New Delhi – 110018, India
Tel: +91 (11) 4513 4500
Email : suresh.motwani@solidaridadnetwork.org

Dr. B.V Mehta
Executive Director

The Solvent Extractors' Association of India
142, Jolly Maker Chambers No 2, 14th Floor
225, Nariman Point, Mumbai - 400021. INDIA
Tel : (91 22) 22021475, 22822979
Email: seaofindia1968@gmail.com

