



# MPOB Codes of Good Agricultural Practice for Oil Palm Estates and Smallholdings

Dr. Chan Kook Weng  
Hj. Wahid Omar





# MPOB View of Sustainability

Sustainability is all about the long-term security of our supply chain if the palm oil business is to continue with brand values and consumer trust

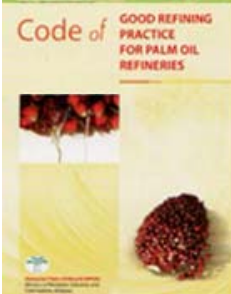
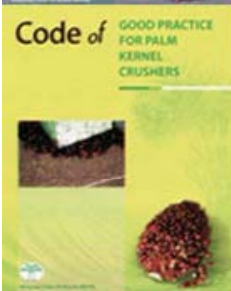
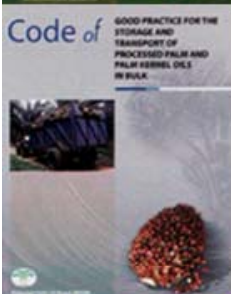
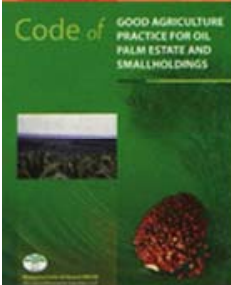
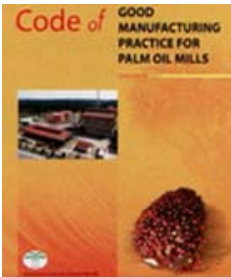


# Sustainability & Codes of Practice

The Technical Barriers to Trade (WTO 1994) demands that the development of sustainability standards must agree with the Codes of Good Practice for preparation, adoption and application of standards

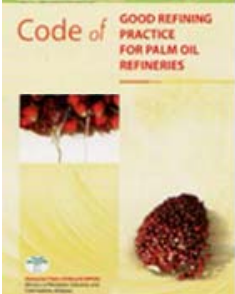
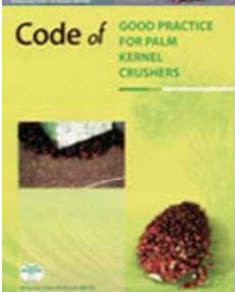
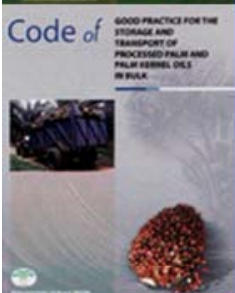
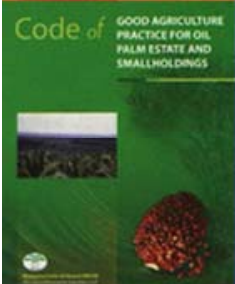
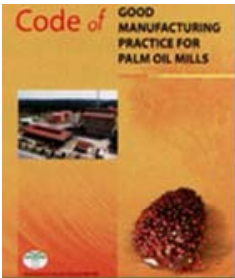
# Assess Sustainability

Structure	Definition	Example
Objective	Aim of initiative	Assure sustainability
Principles	Fulfillment of objective	Positive GHG balance
Criteria	Satisfy rules of a principle	GHG emissions reduce by 30%
Indicators	Measure attribute to fulfill criterion	Carbon intensity (CO <sub>2</sub> e/MJ fuel)
Verifiers	Dataset site-specific to indicator	IPCC GWP of palm oil



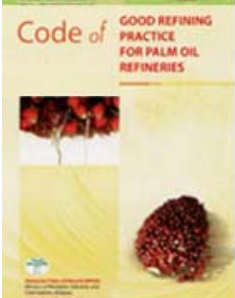
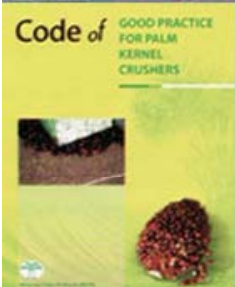
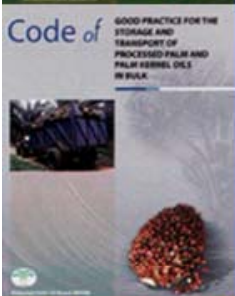
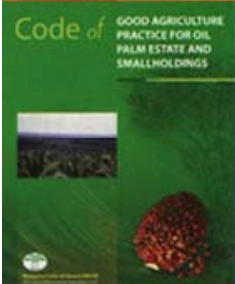
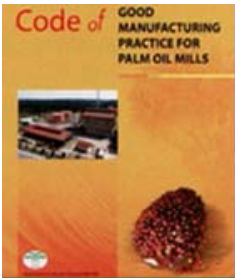
# Objective, Scope & Definition

CoP	Requirements
Objective	Ensure sustainable palm oil meets requirements of food safety, quality, environmental protection, biodiversity enhancement and GHG reduction
Scope	Assure production of quality palm oil from processed fresh fruit bunches suitable for safe consumption and utilization
Definitions	12



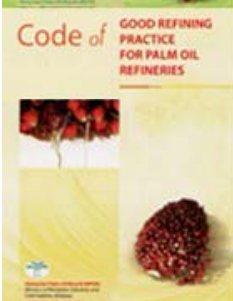
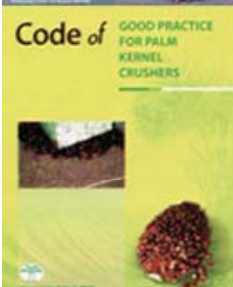
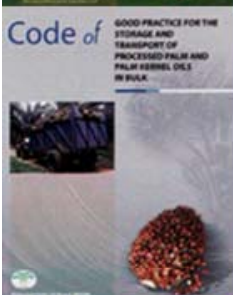
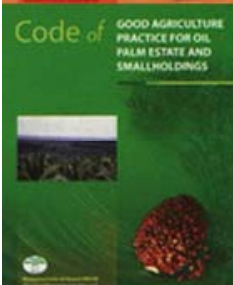
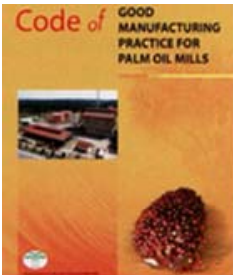
# Sustainability Principles

Issue	Principle
4.1. Traceability	To know where all raw materials come from
4.2. Records & Audit	To know what lies behind the value of palm oil
4.3. Planting Material	To ensure palm oil come from sustainable source
4.4. Site History	To make positive contribution to production site
4.5. Soil Management	To minimize adverse effects in soil
4.6. Fertilizer Management	To optimize balance fertilizer usage with yield
4.7. Irrigation & Fertigation	To minimize adverse effects on water



# Sustainability Principles

Issue	Principle
4.8. Crop Protection	To apply IPM to reduce use of pesticides
4.9. Harvesting	To ensure optimum yield and quality oil in FFB
4.10. Post Harvest	To reduce loss and add value
4.11. By-Products	To avoid, reduce wastage and pollution
4.12. Health, Safety and Welfare	To promote safe and good working conditions and improve workers' wellbeing
4.13. Environmental	To minimize adverse effects on air through emission and to conserve wildlife, biodiversity and HCV areas
4.14. Record of complaints	To ensure remedial actions are undertaken
5. Legality	To respect all applicable laws of Malaysia and agreements of which country is signatory



# Sustainability Criteria & Indicators

Criteria	Indicators
<b>4.1. Traceability</b> Traceable produce	Evidence of FFB from estates and smallholdings
<b>4.2 Record keeping</b> 4.2.1. Record keeping 4.2.2. Internal audit	Evidence of updated and accessible records Evidence of annual audit and corrective actions
<b>4.3.Planting materials</b> 4.3.1. Choice 4.3.2. GMO 4.3.3. GMO planting 4.3.4. OPNCC nursery 4.3.5. Clonal material 4.3.6. Protected variety 4.3.7. Disease resistant 4.3.8. Seed treatment	Evidence of compliance to MS 157 Not planted, if planted, permission needed Evidence of agreement on planting Records of planting materials Evidence from vendors with pedigreed material Respect intellectual property Evidence of reduced use of pesticides Evidence of justified treatments carried out





# Sustainability Criteria & Indicators

Criteria	Indicators
<b>4.4.1 Site history</b> 4.4.1.1. Record history 4.4.1.2 New planting 4.4.1.3 NP <300m 4.4.1.4 NP <25° slope 4.4.1.5 Difficult soils	Evidence of layout of fields and crop history Record of risk assessment done competently Evidence of non-cultivation at such height Evidence of non-cultivation of such slope Avoidance of extensive planting on such soils
<b>4.4.2 Site management</b> 4.4.2.1 Legal rights 4.4.2.2 Conserve soils 4.4.2.3 Identify fields	Evidence of land ownership Evidence of prevention and control of erosion Record of system of field numbering
<b>4.5 Soil Management</b> <b>4.5.1 Soil type map</b> 4.5.1.1 Soil map 4.5.1.2 Topography map	Evidence of soil map with soil types Use soil map to assist planning



# Sustainability Criteria & Indicators

Criteria	Indicators
4.5.2 Cultivation	Evidence of proven cultivation practices
4.5.3. Erosion and runoff 4.5.3 .1 Mechanization 4.5.3.2 Soil moisture	Evidence of adoption of proven techniques Evidence of use of appropriate machinery Evidence of soil moisture techniques adopted
4.6. Fertilizer Management 4.6.1 Nutrient management 4.6.1.1 Nutrient balance 4.6.2.1 Fertilizer usage 4.6.2.2 Fertilizer Application	Evidence of nutrient balance and crop yield Evidence of science-based recommendation Data on maximize benefits and minimize loss



# Sustainability Criteria & Indicators

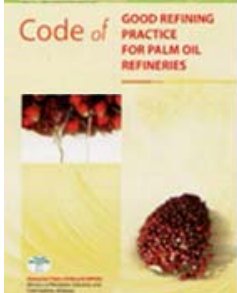
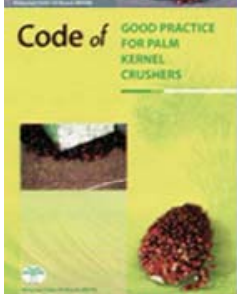
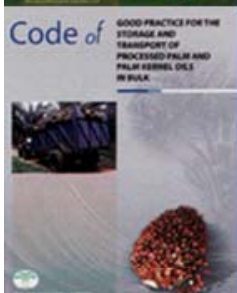
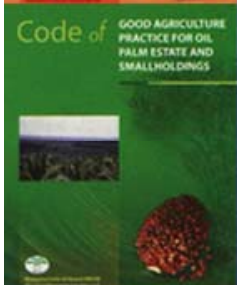
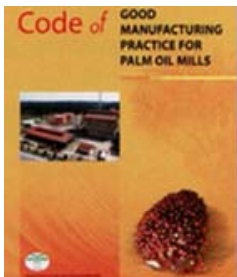
Criteria	Indicators
4.6.3. Application record	Evidence of location, date, type, method and name of operator
4.6.4. Application machinery	Evidence of maintenance of machines
4.6.5. Fertilizer Source and storage	
4.6.5.1. Fertilizer stock	Record of stock updated for inspection
4.6.5.2. Chemicals	Records of separate fertilizer and pesticide
4.6.5.3. Fertilizer store	Evidence of covered, clean and dry store
4.6.5.4. Nursery stock	Records separate from fertilizer
4.6.5.5. Fresh produce	Records separate from fertilizer
4.6.5.6. Hazard and risk	Such areas be clearly indicated
4.6.5.7. Content of source	Record of source and chemical content





# Sustainability Criteria & Indicators

Criteria	Indicators
<b>4.6.6 Organic fertilizer</b> 4.6.6.1 Organic fertilizer handling 4.6.6.2 Human and pig wastes	Evidence of storage and handling to minimize risk of contamination Prohibition of use irrespective of untreated or treated
4.6.6.3 Heavy metals 4.6.6.4 Integration 4.6.6.5 Organic sources	Evidence of analysis prior to application Record of organic and inorganic programme Record of types of organic sources applied
<b>4.7 Irrigation and fertigation</b> 4.7.1 Planning	Evidence of recommendation by expert
<b>4.7.2 Method</b> 4.7.2.1 Efficient method 4.7.2.2 Optimize usage 4.7.2.3 Record usage	Record of best water and nutrient usage Evidence of water management plan Records of irrigation or fertigation available



## Sustainability Criteria & Indicators

Criteria	Indicators
4.7.3 Quality of water	
4.7.3.1 Sewage water	Prohibited for use
4.7.3.2 Water analysis	Record of analysis done annually
4.7.4. Supply of water	Evidence of water from sustainable source
4.7.4.1 Tidal water	Consultation of agriculturist and authority
4.7.5. Water harvesting	Evidence of water harvesting practices



# Sustainability Criteria & Indicators

Criteria	Indicators
<b>4.8. Crop protection</b> <b>4.8.1. Basic elements</b> 4.8.1.1. Use of pesticides 4.8.1.2. Apply IPM 4.8.1.3. Seek advice	Minimize pesticidal use in crop protection Evidence of use of IPM Record of consultation with IPM expert
<b>4.8.2. Choice of agrochemicals</b> 4.8.2.1. Appropriate agrochemicals 4.8.2.2. Officially registered 4.8.2.3. Selective products 4.8.2.4. Instruction 4.8.2.5. Correct dosage 4.8.2.6. Banned chemicals 4.8.2.7. Consult customers	Record of agrochemical use Per Act 149 (Pesticides) and Act 281 (Food) Minimal impact: environment & biodiversity As per label for effective application Prevent buildup of resistance Prohibited to use Determine additional restriction
<b>4.8.3. Advice on pesticides usage</b>	Evidence of consultation with expert

# Sustainability Criteria & Indicators

Criteria	Indicators
4.8.4. Records of application	Details of records of pesticide, dosage, method and name of operator required
4.8.5. Safety, training and instructions	
4.8.5.1. Training	Records of operators trained on safe use
4.8.5.2. Field marking	Evidence of marking of sprayed fields
4.8.6. Personal clothing and equipment	
4.8.6.1. Suitable clothing	Evidence of protective clothing per Act 514
4.8.6.2. Cleaning	Record of cleaning after use
4.8.7. Pre-harvest interval	Should adhere to as per pesticide label
4.8.8. Spray equipment	
4.8.8.1. Suitable equipment	In good working condition and calibrated
4.8.8.2. Correct dosage	Treatment type calculated and prepared

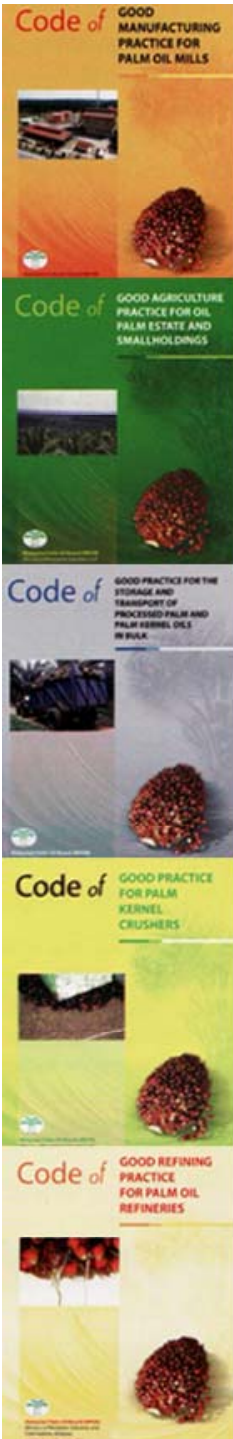


# Sustainability Criteria & Indicators

Criteria	Indicators
4.8.9. Disposal of surplus spray mix	Details of records of pesticide, dosage, method and name of operator required
4.8.10. Pesticide storage	Evidence on:
4.8.10.1. Store regulation	Store according to local regulation
4.8.10.2. Security of store	Store secured, water resistant, ventilated
4.8.10.3. Shelves	Use non-absorbent material
4.8.10.4. Retain spillage	Prevent spillage to waterways
4.8.10.5. Mixing facilities	Correct measuring and mixing equipment
4.8.10.6. Emergency	Facilities to deal with emergency
4.8.10.7. Keys and access	Limited to trained personnel
4.8.10.8. Procedures	Handling accidents with telephone numbers
4.8.10.9. Inventory	List available for inspection
4.8.10.10. Packaging	Stored in original packaging
4.8.10.11. Registered	Only registered pesticides be stored
4.8.10.12. Powder vs liquid	Powder placed above liquid pesticides
4.8.10.13. Warning signs	Placed on access doors







# Sustainability Criteria & Indicators

Criteria	Indicators
<p>4.8.11 Empty containers</p> <p>4.8.11.1 Disposal of empties</p> <p>4.8.11.2 Disposal system</p> <p>4.8.11.3 Rinsing empties</p> <p>4.8.11.4 Pierced empties</p> <p>4.8.11.5 Empties secured</p> <p>4.8.11.6 Disposal regulation</p>	<p>Reduce contamination of environment</p> <p>Should be used when available</p> <p>Rinse 3 times and washings returned</p> <p>Prevent re-use</p> <p>Until disposal</p> <p>As per pesticide Act 149 (1974)</p>
<p>4.8.12 Obsolete Pesticides</p>	<p>Evidence of obsolete pesticides disposed through approved waste contractor</p>

# Sustainability Criteria & Indicators

Criteria	Indicators
<p><b>4.9. Harvesting</b></p> <p><b>4.9.1. Hygiene</b></p> <p>4.9.1.1. Prevent deterioration</p> <p>4.9.1.2. Food safety training</p> <p>4.9.1.3. Toilet and washing</p>	<p>Prevent contamination</p> <p>Evidence of training in basic hygiene</p> <p>Evidence of clean toilet /washing facilities</p>
<p><b>4.9.2. FFB harvesting and collection</b></p> <p>4.9.2.1. Ripeness standard</p> <p>4.9.2.2. Zero unripe tolerance</p> <p>4.9.2.3. Bunch stalks cut</p> <p>4.9.2.4. Pruned frond</p> <p>4.9.2.5. Loose fruit collection</p> <p>4.9.2.6. Prompt delivery</p> <p>4.9.2.7. Harvesting rounds</p>	<p>Evidence of using industry standards</p> <p>Records of rejection of unripe bunches</p> <p>Evidence of stalks cut within 5 cm</p> <p>Evidence of designated frond stacking</p> <p>Loose fruit collected without contamination</p> <p>Evidence of delivery within 24 hours</p> <p>Records of rounds at 10-15 days intervals</p>





# Sustainability Criteria & Indicators

Criteria	Indicators
<b>4.10. Post-harvest handling</b> <b>4.10.1. Logistics</b> 4.10.1.1. Conveyance 4.10.1.2. Infield collection 4.10.1.3. Intermediate hopper	Evidence on: Minimum delay/damage/contamination Minimum delay/damage/contamination No shoveling to prevent bruising
<b>4.11. By-products, waste and pollution management</b> 4.11.1. Identify waste 4.11.2. Operational plan 4.11.3. Dumping of waste	Evidence of identified waste at sites Records of usage of by-products Evidence of non-dumping of by-products
<b>4.12. Worker health, safety and welfare</b> 4.12.1. Action plan	Evidence of an action plan for inspection

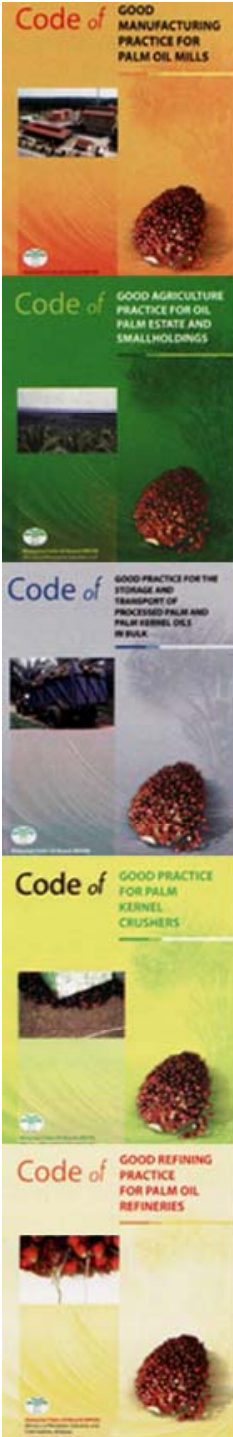
# Sustainability Criteria & Indicators

Criteria	Indicators
<b>4.12.2. Training</b> 4.12.2.1. Provision 4.12.2.2. Record of training 4.12.2.3. Procedures	For dangerous & sophisticated equipment Kept for individual worker Display and explanation of clear instruction in appropriate language
<b>4.12.3 Facilities and equipment</b> 4.12.3.1. First aid boxes 4.12.3.2. Hazards signage	At designated places with personnel i/c Appropriate warning signs displayed
<b>4.12.4. Pesticide handling</b> Health checks for workers handling pesticides	Per OSHA Act 514 (1994) and Pesticide Act 149 (1974)



# Sustainability Criteria & Indicators

Criteria	Indicators
<p><b>4.12.5 Hygiene</b></p> <p>4.12.5.1 Packing and storage sites</p> <p>4.12.5.2 Training</p> <p>4.12.5.3 Clean building</p>	<p>Have adequate pest control measures</p> <p>Evidence of training programme</p> <p>Record of regular inspection for pests</p>
<p><b>4.12.6 Welfare</b></p> <p>4.12.6.1 Comply regulations</p> <p>4.12.6.2 On-site quarters</p>	<p>Record of employment conditions</p> <p>If provided be habitable and comply Workers' Minimum Standards Housing and Amenities Act 446 (1990)</p>



# Sustainability Criteria & Indicators

Criteria	Indicators
<p><b>4.13. Environmental Issues</b>  <b>4.13.1. Impact on Environment</b>                      Concern for air, water, soil and other environmental issues</p>	<p>Comply with Environmental Quality Act 127 (1974)</p>
<p><b>4.13.2. Wildlife &amp; Biodiversity</b>                      4.13.2.1. Conserve biodiversity                      4.13.2.2. EIA</p>	<p>Enhance biodiversity, wildlife and HCV                      Evidence of action plan for habitat and biodiversity enhancement</p>
<p><b>4.13.3. Unproductive sites</b>                      Conversion of unproductive site to conservation areas</p>	<p>Evidence of swamps, steep slopes, deep peat converted</p>
<p><b>5. Legal requirements</b>                      Comply to Malaysian Laws</p>	<p>Malaysian laws and international agreements Malaysia is signatory</p>





Thank You  
For Your Attention

