

KULIM'S ENDEAVOUR TOWARDS SUSTAINABLE PALM OIL

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ABSTRACT

Agriculture is shifting from a production-driven to a consumer-driven industry, moving from a broad base to one with specialised product. The global trend is towards the industrialisation of agriculture. Palm oil and its associated products are important components of this trend. There are increasing consumer pressures to persuade trade bodies to include the environmental dimension in multi-lateral trade rulings. Concerns are also being expressed through retailer pressure, investment criteria and corporate reporting. As such the palm oil industry needs to be pro-active to meet these challenges, not merely at end-user level but throughout the entire supply chain.

A sustainable oil palm industry refers to truly efficient production of nutritionally high quality food where all stakeholders involved in the production chain are committed to ensure that the larger environment and well-being of the community are not compromised.

Kulim believes that win-win management answers can be found through collaboration among the various stakeholders in the palm oil chain. Towards this end, Kulim with its Environmental Policy in place, a signatory to the MPOA Environmental Charter and a member of the Roundtable on Sustainable Palm Oil (RSPO) shall forge forward to improve the sustainable production and use of palm oil based on the "Triple bottom line" – the economic bottom line, the social bottom line and the environmental bottom line.

This paper describes the Best Management Practices (BMPs) which form the guiding principles on environment-friendly and sustainable practices in Kulim estates.

Palm oil is food. The growing consumer pressures worldwide in demanding for some kind of guarantee on the safety of palm oil as a food source will have to be addressed. Kulim therefore will have to take note of the practices such as HACCP, ISO 14001 and Risk Analysis along the supply chain.

The way forward for Kulim for sustainable palm oil is based on performance and partnership with members along the supply chain so as to form/conform to a globally accepted scheme that reflects the needs and expectation of the market place.

INTRODUCTION

The 21st Century is already bringing dramatic changes in agriculture. Traditional production strategy at first produces so well in the past will not be enough to ensure future success. Agriculture is shifting from a production-driven to a consumer-driven industry, moving from a broad base to one with specialised product. The global trend is towards the industrialisation of agriculture. Palm oil and its associated products are important components of this trend. In developed countries, there are increasing consumer pressures to persuade trade bodies to include the environmental dimension in multi-lateral trade rulings. Hence, corporations are under pressure to include environmental consideration in all their product designs and business dealing. A major impact on trade will be eventual eco-labouring of products.

The Sustainable Development (SD) concept was first introduced by the World Commission on Environment and Development in 1987 as “development which meets the need of the present without compromising the ability of future generations to meet its own need”. The SD concept is characterised by three inter-related value systems pertaining to the economy (profits), the society (people) and the eco-system (planet). In business, this is translated as “triple bottom line” - the economy bottom line, the social bottom line and the environmental bottom line.

The sustainable oil palm industry refers to truly efficient production of nutritionally high quality food where all stakeholders involved in the production chain are committed to ensure that the larger environment and well-being of the community are not compromised.

It is at a time like this that the palm oil industry needs to consolidate and be proactive in meeting upcoming challenges. The palm oil industry also needs to meet the challenges with more scientific evidence of sustainable agriculture practices throughout the supply chain.

ENVIRONMENTAL ISSUES CONNECTED TO PALM OIL

In recent times, there have been unfair or even false claims regarding palm oil’s environmental impact. There is in spite of the fact that the palm oil industry has been successful in world trade, in reducing poverty in the agriculture sector, and adopted many environmental-friendly practices. The palm oil industry will always face obstacles and will have to continuously engage in rebuttal based on scientific findings.

For developing countries, compliance with world environmental standard represents a significant increase in production cost for which there may be no obvious compensation in terms of increased returns in the short term. The implementation of strictly enforced environmental standard has certainly been facilitated in Europe and North America where subsidies provided to growers of major crops, whilst producers in less developed countries continue to be largely unsubsidised.

The oil palm industry is now subject to ever increasing scrutiny in terms of environmental impact on the wider social and economic environment in South East Asia. At times, concerns particularly by non-governmental organisations (NGOs) are not well founded in fact, or focus on a particular issue whilst disregarding its general context. This helps to fuel unfounded criticism of the oil palm industry by the general public. As a result many of the larger companies have launched programmes to enforce strict standards in term of environmental auditing and provide factual information for the consumers to mitigate the often misleading information circulated by the NGOs.

Many of the concerns voiced by the environmentalists about the oil palm industry are too simplistic and create much misunderstanding (Table 1). Nearly, most of the concerns voiced by the environmentalists can be refuted and the oil palm positive impact on regional economic development demonstrated.

Table 1 Issues Relating to the Impact of Oil Palm on the Environment

Concern voiced by environmentalists	Industry viewpoint
Oil palm is cultivated as a mono crop and thus reduces biodiversity when it replaces native vegetation	Rice, the backbone crop of Asia's agriculture is also grown as a mono crop. Oil palm spares rainforest from further destruction by reducing the amount of land required to be cultivated with other lower yielding vegetable oil crops. A wide range of ground vegetation species has been identified in oil palm plantations and found to be important in the control of pests.
Expansion in the planted area has increased the rate of forest removal in South-East Asia	Much of the land planted with oil palm had already been logged before being cleared for development. Oil palm spares further rainforest destruction by reducing the amount of land required to be cultivated with other lower yielding vegetable oil crops.
Large quantities of fertilisers and pesticides are required for oil palm production	Great potential for nutrient recycling by returning mill residues such as palm oil mill effluent (POME) and empty fruit bunches (EFB) to the field. Pesticide use small when early warning systems are used and biological pest control systems introduced.
Oil palm plantations are major contributors to forest fires and periodic smoke haze	Zero burning now introduced in Malaysia and Indonesia. Other contributors to smoke haze include past government land clearing projects (e.g. 1 million ha peat project in Kalimantan).
Indigenous people are displaced from their land as a result of expansion in the area planted with oil palm	Oil palm is also a major contributor to rural employment in plantation companies and smallholder schemes.

It is tempting to dismiss some of the unfounded and sometimes outrageous claims made by the NGOs in terms of the industry environmental impact. However, the most sustainable course of action is to make sure the industry follows properly articulated code of practice, and to answer the public's questions with regard to environmental issues using hard facts in a composed and moderate way.

KULIM'S RESPONSE AND INITIATIVES

Kulim has throughout its history been committed to environmentally-friendly agricultural practices. Nevertheless, recognising the increasing important role that environment will play in the 21st Century, Kulim has adopted the following initiatives in 2003/2004.

- a) Kulim's Environmental Policy where our goal of sustainable development as the cornerstone of business policy is emphasized (Appendix 1).
- b) Kulim is a signatory to the Malaysian Palm Oil Association Environmental Charter (Appendix 2). The Charter outlines the guiding principles that its members will uphold. This could include benchmarking in the adoption of Best Management Practices (BMPs) and would form the basis for making claims when publishing the contribution and performance of our Group Estates.

c) The Roundtable on Sustainable Palm Oil (RSPO)

Kulim and New Britain Palm Oil are new members of the RSPO. The RSPO is a new global multi-stakeholder initiative on sustainable palm oil that was formally established under Article 60 of the Swiss Civil Code on 8 April 2004. The not-for-profit Association will have members representing the major players along the palm oil supply chain, namely the oil palm growers, palm oil processors and traders, consumer goods manufacturers, retailers, banks and investors, environmental/nature conservation NGOs and social/development NGOs. The RSPO is a unique platform for pragmatic co-operation to contribute to the expansion of sustainably produced palm oil and its uses.

Kulim will support the RSPO's effort in undertaking projects that will enhance the production and use of sustainable palm oil. These projects are divided into the following broad groups

- plantation management practices
- development of new plantations
- responsible investment in oil palm
- chain of custody

d) Subscribing to ISO 14001 EMS and EIA

Kulim subscribes to the philosophy of environmental management system standard (ISO 14001). To date one palm oil mill and one estate have been certified under this EMS. Under ISO 14001 frameworks, mills and estates are to implement their environmental policies and third party certification had been implemented. The Group Mills and Estates certified therefore need to comply with the relevant environmental legislations and regulations as well as the prevention of pollution.

Kulim undertakes the Environmental Impact Assessment (EIA) for all land development projects in Malaysia, Indonesia and Papua New Guinea as required by national law. Mitigating measures are being implemented as required under this assessment.

e) Implementing and continuous improvement on the various Best Management Practices (BMPs) in Group Estates and Mills.

ENVIRONMENTAL PROTECTION MEASURES

a) The Land Use and Management

The planting of oil palm in jungles or logged jungle areas has to meet several regulatory requirements. An Environmental Impact Assessment (EIA) report is required in clearing more than 500 ha of inland forest land. In the case of coastal swamps, regulation is stricter. An EIA report is required if more than 50 ha of coastal swamps need to be cleared. The report should identify all negative impact the operation will have to the environment and mitigatory measures that need to be taken. Meanwhile, the Land Conservation Act stipulates that the cut off slopes of planting should not be more than 25°.

In the case of replanting, zero burning of bio-mass is practised in all Group Estates. This technique allows all plant tissues to be recycled, enhancing the soil organic

matter. This will invariably help to restore and improve soil fertility. The bio-mass palm residue through decomposition recycles nutrients into the soil and reduces the input of inorganic fertilisers (Table 2).

Table 2 Available Nutrients from Palm Residues at Replanting

Palm residues	Nutrient (kg/ha)			
	N	P	K	Mg
Palm trunk	219.6	21.2	314.5	52.6
Fronde	119.8	11.0	109.7	23.3
Total	339.4	32.2	424.2	75.9
Fertiliser equivalent	AC	RP	MOP	KIE
	1357.6	204.8	848.4	487.5

AC = Ammonium Chloride
MOP = Muriate of Potash

RP = Rock Phosphate
KIE = Kieserite

The return of organic matter also improves the physical and chemical properties of the soil. The zero burning techniques of replanting generally see the shredding of bio-mass which then can be windrowed, used as mulch and/or used in contour planting.

b) The Soil Resource Protection Measures

To prevent the degradation of the soil and to conserve fertility, several measures are taken to planting, such as terracing and construction of soil pits. Terracing is generally done in most places today at slopes greater than 6 – 8 degrees to prevent erosion. Construction of silt pits is usually done along harvesters' paths and avenues to reduce the length of slope and trap soil and plant nutrients.

Another protection measure is the establishment of legume cover crops (LCC). The planting of the new legume, *Mucuna bracteata* is now the standard policy for replanting in Group Estates in Malaysia from 2003/2004. Besides fixing nitrogen, the covers recycle large amount of organic matter, improve soil structure, reduce erosion and promote infiltration of rain water. Placement of the pruned fronds along the slopes on hill planting is also done to minimise soil erosion and fertiliser loss.

c) Soil Management

Soil organic matter is important for maintaining soil fertility and soil structure as well as recycling soil loss and increasing nutrients and water use efficiency. The organic matter level should be maintained at/or improved to a satisfactory equilibrium value for the soil type. The organic matter will derive from cleared vegetation in new plantings from the return of fronds, male inflorescences, shredded leaf bases and old roots in existing stands and from felled palms in replants. The organic matter level can be improved by adding waste bio-mass from palm oil processing such as EFB, mill effluent and bio-compost.

The BMPs for Soil Management that are currently in practice consist of:

- During clearing, minimise the period of no ground cover. Ground cover slows the depletion of soil organic matter from the effect of sunlight and erosion. It also adds to the organic matter content through leaf and plant litters.
- Immediate ground cover can be provided by felled trunks and trunk chippings and should be followed by rapid establishment of legume cover.
- During harvesting or pruning, cut fronds should be placed across the mechanical paths.
- Recycle all organic materials – bio-compost, EFB, POME and decanter solid to the field.
- Infragile or marginal soil such as peat and potential acid sulphate soils, water management is the key issue. The water table should ideally be maintained at 0.6 – 0.9 meter through a network of weirs along the collection drains.
- In tropical soil, regular application of Dolomite limestone is important to neutralise acidity and raise soil pH.
- Blanket weed spraying is discouraged.
- Fertiliser practices are based on discriminatory fertiliser recommendations. These recommendations are prepared based on sound scientific principles that are taken into consideration, soil, plants and climatic factors. The fertilisers are applied in several doses a year to minimise nutrient loss through leaching and surface runoff.
- Greater emphasis is now given to the integration of inorganic fertiliser with organic material recycling such as bio-compost in Group Estates.

d) Integrated Pest Management

Integrated Pest Management (IPM) is the key to sustainable pest control. The objective is to adopt cultural, biological, mechanical, physical or any other less hazardous strategy to minimise the use of pesticides.

The Group Estates in the last two decades see the practice of IPM being increased. This consists of regular pest monitoring, suitable agronomic practices including the conservation of beneficial broadleaf flowering weeds to enhance parasite and predator activities and judicious use of chemicals. Greater emphasis is given to the use of safer and more target specific insecticides with fast fading residues that are “soft” to the environment for example Pyrethroids, Bt Formulations and IGRS.

With regular monitoring and detections, outbreaks are nips in the bud thus requiring limited spraying. There should be greater awareness for operator safety.

BMPs being practised consist of the following:

- For rat control - Since the 1980s Group Estates have embarked on the use of barn owls (*Tyto alba*) for biological control of rats. Currently, many of the Group Estates have achieved barn owl boxes at a density of 1 box per 10 ha of oil palm. Owls have been recorded to suppress fresh fruit damage by rats and thus minimise the need to use rodenticide baits.
- Bagworm and nettle caterpillar – Early detection is the key in the control of these pests. Pre and post treatment census on a grid system is being widely practised in Group Estates. Action taken to control the pests by the use of census data following the IPM strategy. Control measures include selective insecticide applications for example trunk injection or spot spraying with parasitoids or *Bacillus thuringiensis* formulation once when an economic threshold level of the pest population is exceeded.
- Group Estates are now encouraged to cultivate nectariferous plants like *Antigonon leptopus*, *Euphorbia heterophylla*, *Cassia cobanensis* and *Turnero subulata* as an indirect control for these pests. These plants encourage population of parasitoids and predators of bagworm and nettle caterpillar by providing them with nectar and shelter to increase the population of natural enemies which in turn assert biological control on the pests.
- Control of *Oryctes rhinoceros* beetle – This pest has been reported to be on the increase as a result of practice of zero burning. Combination of Pheromone trapping of the adults, destroying breeding sites and target spraying using Pyrethroids are currently in practice in Group Estates. This IPM strategy has been successful to control the outbreak of this pest.
- Blanket weeding using herbicides is discouraged in Group Estates. Spraying is confined to circles/strips along the planting rows which represent only about 25% of the areas. Harvesters' paths are roto-slashed at 6 – 8 weeks interval in order to establish “soft” grasses. LCC establishment during the early years actually reduces the need for spraying.

e) Management and Utilisation of Residues

Oil palm plantations produce large amount of by-products which can be recycled as organic matter. Economic sustainability requires the use of fertilisers on most soils together with by-products from the plantations so that the total nutrient inputs should be very similar to nutrients exported in the harvested products plus exports in vegetation, soil and palm bio-mass.

BMPs that are currently being practised by Group Estates are as follows:

- Trunk and frond residues from replanting are recycled as organic matter through the zero burning technique.
- Pruned fronds and male inflorescences are routinely recycled in the field as organic matter.
- Mill residues such as mesocarp fibre and shell are usually used in Mills as fuel in the boilers while the excess shells are used as mulch for oil palm seedlings.

- Empty fruit bunches (EFB) are applied at a rate of 30 – 50 m tonnes/ha in Group Estates thus replacing 60% - 70% of the inorganic fertiliser annually.
- Palm oil mill effluent (POME) which contains organic matter and plant nutrients are excellent substitutes for inorganic fertiliser. POME is applied in Group Estates close to the palm oil mills at a rate of 600 litres/palm/year using the sprinklers and tractor-tanker system. The supernatant portion is then applied using furrow irrigation. POME applied at the above rate essentially replaces 90% of the inorganic fertiliser requirement of the palms annually.
- Adoption of Mill Integrated Waste Management Solution (MIWAMAS)

The Bio-composting system developed by Asia Green Environmental Sdn Bhd offers an effective solution to the oil palm industry perennial problem of waste disposal. MIWAMAS utilises 100% POME and EFB and uses a technically advance method to convert this waste matter into compost. The EFB are firstly shredded using high speed hammer mill and then stacked in windrows of 1.5 m high by 45 m length in an open field. POME/raw effluent are then pumped from the pond to be sprayed onto the windrows at a specified rate of 3 days interval. The windrows are turned regularly using a windrow turner for better mixing and aeration. The composting accelerants are sprayed once at the start of the process to accelerate the composting process. Throughout the composting process, the windrows are covered by an air-permeable covering to avoid drenching by heavy rain and to prevent leaching of nutrients. The covering is crucial for the control of temperature and moisture content, two key factors that affect the speed of bio-composting and quality of the end product. The compost is matured after 70 – 100 days and is ready for use. Bio-compost when used in sufficient quantity is capable of replacing 50% - 60% inorganic fertilisers.

By 2006 all Group Mills are expected to be fully converted into the MIWAMAS. Thus POME and EFB applications are expected to be gradually phased out in favour of the zero waste discharge bio-composting system.

f) Water Management

Water Management is a very important aspect of oil palm cultivation. Deficit or surplus of water would create stress to oil palm and adversely affect yield of the crop. To realise full oil palm yield potentials, focus should thus be given to ensure adequate water and moisture in the soil throughout the year in tandem with other agronomic practices.

Water management in the Kulim Group's estates is basically divided into two main categories according to the nature of the problem. These are management of water in the marginal soils such as peat and potential acid sulphate soils and moisture conservation on undulating and hilly areas.

Water management in the peat and potential acid sulphate soils is the key for realising the yield potential of the soil. The water table should ideally be maintained at 0.6 - 0.9 m through a network of weirs along the collection drains.

Water conservation on undulating, hilly or inland soils is critical to crop production. Management of water in inland soils is not only to serve the purpose of conserving

soil moisture but also to minimise soil erosion and nutrient losses. Large amount of nutrients can be washed away with sediment during the wet weather through run-off thus gradually depleting nutrient concentration in the soils. Therefore proper control measures must be adopted in order to minimise such losses.

BMPs that are currently being practised in the Kulim's Group estates are as follows:

- Daily recording of water level at critical points in the field. These readings are used to adjust the level of the water gate/weir in order to achieve the desired water table in the soil.
- During the wet season all weirs and water gates are opened at intervals to allow flushing out poor quality water in the field. Before the onset of dry season, all water gates/weirs are closed in order to retain fresh water at a desired level.
- Silt pits are constructed to trap water sediment from surface run-off. These pits are decked near the roadside or mechanised terrace paths. Depth of the pits should not be more than 1 m to enable the conserve water to be fully utilised by the palms.
- Foothill drains are a form of trench constructed at fringes of hills where the slope or gradient changes abruptly. Water from surface run-off will be trapped in the drains during the rainy season. These drains act as a break of surface run-off as well as conserving moisture.
- Frond stacking is carried out to minimise the loss of water run-off down the hill slope and to conserve water through mulching. Cut fronds are normally stacked along the palm avenues across the slope.
- Leguminous cover crop (LCC) assists soil conservation and moisture retention.
- Establishment of "soft" grasses in the harvesters' paths will cut erosion by decreasing surface velocity of water and basically restraining soil movement.

g) Energy Use

The efficient use of renewable energy resources should be targeted since the use of non-renewable resources, such as fossil fuel, is not sustainable in the long term. Greenhouse gases and polluting gaseous emissions must be minimised.

The oil palm is an energy efficient crop compared to other major annual oil seed crops, its cultivation and processing requires lower inputs of agro-chemicals and fossil fuel to produce a tonne of oil, with lower resultant emissions. It has a very favourable input – out energy ratio of 9.5 as against 2.5 for soyabean and 3.0 for oil seed rape.

BMPs currently in practice in Group Mills are:

- The use of shells and fibre (bio-mass) as fuel in palm oil mills ensures that non-renewable fuel consumption is low compared with the production of other vegetable oils.

- The use of bio-mass as boiler fuel also minimises fossil fuel consumption and hence CO₂ emission.
- The MIWAMAS system also minimises methane production. The composting of effluent allows breakdown of this organic waste and thus reduces methane.

BIO-DIVERSITY

The maintenance of genetically diverse germplasm of the crop is essential for the crop to meet changing needs of the future. Conservation of bio-diversity in the estates and its surroundings is important particularly where plantations are located in areas of high conservation value.

Being a perennial tree crop cultivated in the tropical areas, the oil palm has greater bio-diversity than cereals, vegetables and other short term cropping system of the world. Besides crop genetic bio-diversity, there are several types of mono crops and dicot weeds, *Epiphytes*, small animals and hosts of micro-organisms that inhabit the soil eco-system.

BMPs that are currently in practice in Group Estates are:

- The Plant Breeding programme includes collection of genetically diverse germplasm from other oil palm areas for conservation.
- Maintain riparian reserves along the water courses populated by native species.
- The planting of beneficial plants improves bio-diversity in Group Estates.
- Maintenance of permanent green belts at strategic locations. This includes steep areas with more than 25% slope and other areas marginal for oil palm planting for example wetlands and swamps.
- Maintenance of water catchments areas and water bodies.

PRODUCT QUALITY

Sustainable agriculture must be profitable. On the output side, this will involve producing optimal amount of high quality products, minimising costs/wastes and adding value wherever possible. Consumer concerns about food safety, environmental performance and social responsibility must be satisfied.

BMPs that are currently in practice in Group Estates are:

- High yield, harvesting efficiency and the right harvesting standard are being vigorously pursued in order to maximise product value, mill extraction efficiency and maintain a high oil extraction ratio.
- FFA (free fatty acid) content and oxidation are kept to acceptable level to maintain excess to market. Fruits must be collected from the field soon after harvest and be processed quickly.
- Site specific precision agriculture to optimise inputs and thus reduce costs and enhance productivity is being pursued.

SOCIAL AND HUMAN CAPITAL

Good relationships with the workforce and their dependents, local community, suppliers, customers, district/regional and the national government and responsible non-governmental organisations (NGOs) are vital for long term sustainability of the plantation business.

As at 31 December 2003, Kulim's Group of companies has 12,707 employees over the three operating countries i.e Malaysia, Indonesia and Papua New Guinea. The bulk of the employees are distributed over Group Estates in these three countries; and thus making estates a very important centre for economic and social life of the entire community. The Group takes this responsibility seriously and has listed out three essential policies namely the business policy, ethic policy and people policy for implementation.

BMPs that are currently in practice in Group Estates consist of the following:

- The local population of the estate and its surrounding community are given priority for any employment opportunity within the property.
- We adhere to legislation on employment benefits and conditions, child labour and social security. We are signatory to collective agreements in Malaysia like MAPA/NUPW for workers and MAPA/AMESU for staff.
- Within an estate, amenities such as housing, utilities, adequate schools, medical services, places of worship, playground and day-care centre are provided for use by the employees and their dependents.
- In-house courses are conducted regularly at Kulim Agrotech Centre in Malaysia to upgrade skills of estate personnel. Training programmes include courses on TQM, ISO 9000, ISO 14001 and awareness on occupational safety and health.
- Kulim inculcates right of ownership of its operations with recently approved Employee Shares Option Scheme. Through this scheme, employees thus become stakeholders in the Company.
- Kulim maintains constant dialogues with relevant national/local authorities either directly or through associations. Kulim participates in the various working groups under MPOA/MPOB/RSPO/MAPA.

THE WAY FORWARD FOR KULIM TOWARDS SUSTAINABLE PALM OIL

The way forward for Kulim for sustainable palm oil is based on performance and partnership with members along the supply chain so as to form/conform to a globally accepted scheme that reflects the needs and expectation of the market place.

Palm oil is a major food and food safety has become a key concern of major stakeholders in the international food trade. At the heart of the food safety issues sit consumer concerns. Customers are demanding attention to environmental impact, food safety and social accountability for everyone in food production regardless of where they are in the supply chain.

Competition in the food industries of the future will therefore not be between individual companies but individual value systems. Winning will be about creating and sustaining value

within the supply chain system through product leadership, operational excellence and customer intimacy.

It has been pointed out that in the early stages of the palm oil chain, the main food safety hazards identified are the use of pesticides in plantations, contamination during transport and storage of palm oil in the country of origin and contamination during processing of palm fruits and crude palm oil. By 2008 more than half the present 800 pesticides presently used within the EU are expected to be forbidden. The maximum residue limits (MRL) registration for oil seeds, palm fruits and vegetable oils are being reviewed under the auspicious of CODEX. These MRL could well affect the usage of pesticides in plantation operation and Kulim needs to keep abreast with this development. Therefore, Kulim together with other stakeholders of the palm oil sector should consider the framework for the adoption of Hazard Analysis and Critical Control Point (HCCP) scheme together with BMPs for the whole palm oil chain.

Nevertheless Kulim must take note that practices such as BMP, HCCP and risk analysis which were earlier voluntarily, could gradually become mandatory because of consumer pressure. Unfortunately some measures under the guise of food safety may be exploited to restrict trade and avoid economic competition.

CONCLUSION

Stakeholders are more demanding in the environmental expectation of operations. This concern will only be intensified. The link between trade and environment cannot and should not be denied. Already corporations are under pressure to comply with environmental requirements. In the case of the palm oil industry, the sustainability of the industry will depend on how they can convince consumers of our sustainable practices. Sustainable agriculture initiatives will be expected and should be strived towards. Kulim will have to respond to this growing opportunity by integrating environmental with social and economic bottom lines.

It is appreciated there will always be unfair claims about the palm oil industry. The challenge is for us to continuously spread information about the environmentally-friendly and sustainability of palm oil and review scientific evidence to rebut unfounded negative claims.

Kulim has to make continuous improvement and ensure consistency in the adoption of the BMPs among Group Estates. Partners along the supply chain will have to be engaged so that the question of sustainability of the palm oil that is from seed to the frying pan be worked out. The ability to do this will enhance image of Kulim's palm oil production in the eyes of the consumers. This is particularly true with the emphasis on food safety.

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Appendix I Kulim's Environmental Policy



We, the Kulim Group of Companies, believe in the goal of Sustainable Development as the cornerstone of business policy. We recognise, as a good corporate citizen, our responsibilities in safeguarding the environment in the course of our business operations.

To work towards developing a balance between environmental conservation and business objectives, we shall:

- Adhere to and comply with all relevant environmental legislations of the country in which we operate.
- Review, adopt and implement Good Management Practices currently established in the industry.
- Adopt and implement the principles of Reduction, Reuse and Recycle in all matters pertaining to the use of resources and to pollution elimination.
- Plan, assess and take judicious actions to alleviate any potential negative impacts on the environment and local community with respect to any new development.
- Undertake to communicate our Environmental Policy to all stakeholders and educate our employees to practise and uphold our business commitment on caring for the environment.
- Continue to explore and implement cost effective technology in environmental management practices.
- Monitor and report to the Board of Directors on the implementation of this Environmental Policy and the achievement of environmental objectives and targets.



**PERSATUAN MINYAK SAWIT MALAYSIA
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**MALAYSIAN PALM OIL ASSOCIATION
ENVIRONMENTAL CHARTER**

We, the members of MPOA, hereby declare that we care for the well being of our environment. We are committed to protect and conserve them for future generations. We shall strive to maintain good balance between environmental conservation and business objectives.

We shall therefore aim to use natural resources in an ecologically sustainable manner.

We Shall:

1. Establish appropriate infrastructures and responsibility for environmental affairs within our organisations and carry out appropriate and routine assessment and reporting procedures on such matters;
2. Endeavour to preserve high conservation value tropical forest and natural areas of unique scientific, historical and cultural interest for posterity;
3. Undertake to carry out Environment Impact Assessment (EIA) studies on new land developments in compliance with Department of Environment (DOE) requirements;
4. Adhere and conform to all relevant environmental legislation of the country;
5. Adopt and implement best management practice at all times currently established in the Industry;
6. Take judicious actions to minimise environmental pollution;
7. Operate with due regard for the welfare, health and safety of employees, the local community and the wider public;
8. Educate our employees and our business partners to accept, uphold and apply this Charter judiciously.