SHELL'S JOURNEY TOWARDS A SUSTAINABLE BIOFUEL SUPPLY CHAIN

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MOBILITY GIVES ACCESS TO DEVELOPMENT
DEMAND WILL INCREASE RAPIDLY

MOBILITY IS CRITICAL TO OUR DAILY LIVES.
Transport accounts for a quarter of global energy use
and energy-related CO₂ emissions.

GLOBAL POPULATION
COULD REACH
9 BILLION
BY 2050

DEMAND FOR
MOBILITY COULD
TRIPLE

ROAD TRANSPORT
CO₂ EMISSIONS
COULD INCREASE UP TO
80%
LIQUID FUELS WILL CONTINUE TO DOMINATE

- Electric and H2 vehicles to increase
- Most vehicles will continue to use internal combustion engines
- Light duty sector will experience greatest level of change
- Heavy duty remains reliant on liquid

BIOFUELS ARE NEEDED AS PART OF THE FUTURE ENERGY MIX

BIOFUELS ARE THE MOST REALISTIC COMMERCIAL SOLUTION

They offer:
- CO2 Emissions Reductions
- Diversification and Energy Security
- Integration with existing infrastructure
- Rural Development Opportunities
TACKLING CO₂ AND SUSTAINABILITY CONCERNS

A number of CO₂ and sustainability issues have been linked to the production of ethanol and FAME:

- Wide range of ‘Well-to-wheel’ CO₂ performance
- Agricultural social issues get linked to biofuels (e.g. workers’ rights, local community land rights)
- Environmental issues in agriculture such as rare habitats and species, direct/indirect land use change, air+ water pollution, soil erosion
- Food security issues now linked by some to Biofuels
- Population increase, increasing meat consumption, a slowing down of yield increases, climate change pressure on arable land

SHELL’S APPROACH

- **Internal Governance**: Rules and practices to help assess risks in biofuels supply chain, implement controls, monitor compliance and report our progress
- **Shell’s sustainability clauses**: Request that suppliers to sign up to Shell’s sustainability clauses in new and renewed contracts
- **Certification**: Engaging industry, governments, intergovernmental agencies and policy makers to encourage sustainability standards in the biofuels sector
SHELL-PATUM SMALLHOLDER DEVELOPMENT PROJECT

- Joint project between Shell Thailand and Patum Vegetable Oil Co. Ltd
- Kicked-off August 2012
- Objective: Drive sustainable palm oil production in Thailand
- Support/prepare CPO suppliers + associated smallholder groups in achieving RSPO certification

PALM OIL PRODUCTIVITY POTENTIAL

- Oil Palm Industry in Thailand:
  - Third largest producer globally (1.8 mill t CPO in 2011)
  - >70% of the area planted with palm oil is managed by smallholders
  - 25-30% of yearly production exported (avg. last 10 years)
  - 30-35% of CPO used for biodiesel (avg. last 5 years)

- Significant Yield Increase Potential:
  - FFB yield (t/ha): 16 → 19
  - OER (%): 17 → 20
  - CPO Production (t): 1,400,000 → 1,900,000
- Potential to increase by 36%
SMALLHOLDER ISSUES

- Limited knowledge
  - Nutrient requirements, fertilizer application, soil fertility
- Limited professional farm management
  - Record keeping, clear procedures, training and improvement, managing labor and transportation
- Limited financing
  - Insufficient fertilization, low quality seedlings
- Lack of incentives for quality
  - Sellers market, no quality pricing and little incentive to harvest ripe FFB

THE CHALLENGES OF SMALLHOLDER CERTIFICATION

- Spot market for FFB
  - Weak relationship between farmers and mills
- Fragmented production area
- High number of middlemen/collection centers
- Lack of smallholder groups
- Challenge for setting up group certification
  - Group formation takes a long time
  - RSPO Group Certification requirements demanding
- Unclear price incentives for certification
- High start-up costs (implementation, membership, audits and compliance)
- Management requirements
- Limited influence mills on farmers
- Lack of support for smallholders
...DRIVING SUSTAINABLE PALM PRODUCTION IN THAILAND...

By using RSPO certification

Work together

With 8 mills and plantations

Middle-stream

Try to link collecting centres

Upstream

Shell +

Downstream

Work with

Farmer groups

HOW IT WORKS IN PRACTICE

Set up working team at mills

Tailor-made workplan with each mill

Provide intensive training/guidance + facilitation

Promote RSPO to farmer groups

Certify RSPO

Provide necessary training/set-up group management system

Support set-up of farmer groups towards RSPO
POTENTIAL OUTCOMES

- Increased yields (c.36%)
- Access to the market in the long term
  - Markets are changing and farmers need to adapt
- Improved knowledge and farming practices
  - Capacity building measures are part of the standard
- Better organisation and management
  - Smallholders need to form groups to join RSPO
  - Sophisticated group management requirements
- Improved environmental and ecological conditions
- Avoid conflict and maintain harmony in the communities

SUMMARY

- Biofuels
  - Are needed to decarbonise the transport fuel sector
  - Can be produced sustainably, including CO₂ savings
- Robust multi-stakeholder voluntary schemes are valuable in limiting sustainability risk and improving feedstock performance
- Downstream companies can effectively support/encourage sustainable production amongst smallholders, e.g. Thai RSPO project
- What else could the oil industry do to support agriculture in becoming more sustainable?