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How to make agri-food supply chains sustainable: A multinational's perspective

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Following the Company's Corporate Purpose, Unilever has decided to choose agriculture as one area of focus for developing sustainable supply chains (the other areas are water and fish). Based on Triple Bottom Line considerations, a number of principles for sustainable agriculture has been adopted and a set of 10 indicators has been developed. These indicators are now being tested in a limited number of pilot projects. These pilot projects should result in the development of sustainable agriculture standards, which can serve as a basis for future sourcing policies.

Key words: Agriculture, Supply Chain, Triple Bottom Line, Indicators, Standards, Stakeholder consultation.

1. Introduction to Unilever

Unilever is a multinational company, producing branded fast moving consumer goods in foods and home and personal care products. Unilever foods represents somewhat over 50 % of the business. Agriculture (including animal husbandry and fisheries) provides an estimated two-thirds of all Unilever raw materials.

2. Unilever and Sustainable Development

Unilever's view is that it is not sufficient to make good and safe products and to market them successfully. We believe we should also seek actively to align economic, environmental and social objectives right along our supply chain. Our purpose: to meet the everyday needs of people everywhere, also means for us ensuring that the raw materials that we use remain available for the indefinite future. Another consequence is that we seek to satisfy consumer expectations in terms of the nature and origin of our raw materials.

Through the Unilever environmental programme, we run a number of initiatives on product improvement and process control in the supply chain. In addition, Unilever had embarked on three sustainable development initiatives in: fisheries, water stewardship and agriculture. This article provides the background to Unilever's contribution to sustainable agriculture.

3. Sustainable agriculture: key requirements

In our definition of sustainable agriculture, land is managed so as to guarantee ongoing high yields of agricultural produce over time, while minimizing inputs and costs in terms of fossil energy, fertilizers, pesticides, herbicides or other auxiliaries. It is, in our definition, not sustainable to keep yields high by continuously increasing inputs into the process, while eroding the inherent productivity of the soil. Nor is it sustainable to try and maintain agriculture solely on the basis of subsidies. Competitiveness should be proven through free market place pricing.

In practice, a complex set of criteria will have to be met:

- Output must be high enough.
- Negative environmental impacts on soil, air, water and biodiversity must be minimized.
- Quality and safety of products must be guaranteed.
- Changing consumer demands must be met.
- Profitability must be competitive with other industry sectors.
- Agriculture must offer an attractive livelihood to workers.

Although stakeholders views vary, the following goals described by Professor Jules Pretty, University of Essex and author of "Regenerating Agriculture", summarize the prevailing views on how to meet these criteria:

- Maximizing the incorporation of natural processes such as nutrient recycling, nitrogen fixing, and pest-predator relationships.
- Minimizing the use of external and non-renewable inputs that damage the environment or harm the health of farmers and consumers.
- The participation of farmers and rural communities in the processes of problem analysis, and technology development, adaptation, and extension.
- A more equitable access to productive resources and opportunities.
- Greater productive use of local knowledge, practices and resources.
- An increase in self-reliance among farmers and rural communities.

- An emphasis on building strong rural social organizations and dynamic rural economies.

Obviously, this suggests a significant move away from the principles of so-called "intensive" agriculture, but we believe it is also different, and in certain respects more comprehensive than so-called "organic" farming. The emphasis is on a total systems approach towards sustainable production, based on rational analysis and validated assumptions. All this needs to be achieved while meeting the nutritional needs of a growing world population which enjoys increasing disposable incomes.

The challenge in sustainable agriculture is to combine the latest scientific views on all aspects of agronomy with empirical, sometimes traditional knowledge on pest management, crop rotation etc. This body of knowledge needs to be developed and brought to the rural community through participative learning, involving the people concerned. In this way, the learning process itself (which will have to continue once outside involvement has stopped) will be sustained. It is not Unilever's aim to make suppliers dependant (i.e. on Unilever input of knowledge and expertise), but on the contrary to support them in setting up consulting mechanisms aimed at finding solutions.

4. Contribution of Unilever

For a number of crops, Unilever has been involved in the development of agricultural best practice for a number of years for crops including vegetables, tomatoes, oil palm, tea. Vegetables and tomatoes are being grown by farmers under contract for Unilever, oil palm and tea are grown on Unilever owned plantations (although not all of the volume needed by Unilever comes from these sources: the remainder is bought on the open market). All of Unilever's future activities in this area will build on the experience gained for these crops. In 1995, Unilever commissioned two studies in relation to sustainable development. One was a study on external stakeholder perspectives on sustainable Agriculture. Various people from all walks of life were interviewed, and asked the question what they thought sustainable agriculture should be, and what role a company like Unilever could play in that. The second study looked into existing reports on Sustainability Indicators, and selected a group of indicators that were supposed to be relevant to Unilever, measurable by Unilever, and within its range of control. Based on the outcome of these

studies, the Unilever sustainable agriculture initiative was shaped in a workshop held in 1998.

5. Developing our sustainable agriculture indicators

Building on our external consultation, Unilever ran a workshop with people from inside the company, from NGOs and with agriculture experts to agree the sort of parameters to be used to define and monitor progress towards sustainable agriculture practice. From these has come a set of generic indicators which can be refined and tailored to address the characteristics of different crops and the particular local environmental in which they are grown. In selecting indicators, priority has been given to understanding ecological sustainability in agriculture. We believe that without this foundation we cannot meaningfully address social and economic factors.

1. Soil fertility/health

Soil is fundamental to agricultural systems, and a rich soil ecosystem contributes to crop and livestock performance. Sustainable agriculture practices can improve beneficial components of the soil's ecosystem. Typical parameters: number of beneficial organisms, soil organic carbon.

2. Soil loss

Soil eroded by water and wind can lose both structure and organic matter, so diminishing the assets of an agricultural system. Sustainable agriculture practices can reduce soil erosion. Typical parameters: soil cover index, soil erosion.

3. Nutrients

Crops and livestock need a balance of nutrients. Some of these can be created locally (eg nitrogen), and some must be imported. Nutrients are lost through cropping, erosion and emissions to the air. Sustainable agriculture practices can enhance locally produced nutrients and reduce losses. Typical parameters: amount of inorganic nitrogen/phosphorus/potassium applied, balance of N/P/nitrogen/phosphorus/potassium over crop rotations.

4. Pest management

When pesticides are applied to crops or livestock, a small but significant proportion can escape to water and air, kill beneficial or non-target wild life or accumulate in foods, thus affecting human health and ecosystems. Sustainable agriculture practices can substitute natural controls for some pesticides, so reducing dependence on externally introduced substances. Typical parameters: amount and type of pesticides (active ingredient) applied.

5. Biodiversity

Agriculture has shaped most ecosystems in the world, and biodiversity can be improved or reduced by agricultural practices. Some biodiversity is highly beneficial for agriculture. Sustainable agriculture practices can improve biodiversity - both by "greening the middle" of fields as well as "greening the edge". Typical parameters: level of biodiversity on site, habitat for natural predator systems, cross boundary effects.

6. Product value

Product value is a measure of the desired outputs of an agricultural system. Sustainable agriculture practices should be able to maintain or improve product value. Typical parameters: total value of produce per ha, nutritional value, including minerals, ratio of solid waste re-used/-recycled over solid waste disposed to landfill.

7. Energy

Although the energy of sunlight is a fundamental input to agriculture, the energy balance of agricultural systems depends on the additional energy supplied from non-renewable sources. Sustainable agriculture practices can improve the energy balance and ensure that it remains positive - there is more energy coming out than going in. Typical parameters: total energy input/total energy output, ratio renewable over non-renewable energy inputs.

8. Water

Some agricultural systems make use of irrigation water, others pollute or contaminate ground or surface water with pesticides, nutrients or soil. Sustainable agriculture practices can make targeted use of any inputs, and so reduce losses. Typical parameters: amount of water used, leaching and runoff of N/P/K to surface and ground water.

9. Social/human capital

Finding ways to ensure we use natural resources sustainably demands initiatives in the social sphere such as collective action, the sharing of new knowledge, and continuous innovation. Sustainable agriculture practices can improve both social and human capital in order to ensure normal outputs. The prime responsibility for this should remain with the local community, leading to realistic and actionable targets. Typical parameters: group dynamics/organizational density of rural community, rate of innovation.

10. Local economy

Agricultural inputs (goods, labour, services) can be sourced from many places, but when they come from the local economy, the expenditure helps to sustain local businesses and livelihoods. Sustainable agriculture practices can help to make the best use of local and available resources in order to increase efficiency. Typical parameters: amount of money/profit spent reinvested locally, employment level in local community.

6. Current state of affairs

Unilever has chosen to start pilot projects on a limited number of crops. The criteria for choosing these crops were:

- Their strategic importance to Unilever
- The level of knowledge and control in Unilever

The table below lists the pilot projects and their status of implementation.

Crop	Country	Type of project	Status
Vegetables: peas	U.K.	Field	Started 1997
Vegetables: spinach	Germany	Field	Started 1999
Tea	Kenya	Field	Started 1999
Oil palm	Malaysia	Field	Started 1999
Tomatoes	Australia/Brazil	Field	Started 1999
Sunflower	Hungary/France	Desk	Will start 2000
Rape seed	Poland/Germany	Desk	Will start 2000

The field projects will develop, for their specific crop and circumstances, relevant parameters for each of the 10 indicators. Several years of measurement will be needed to show whether these parameters can be influenced to move towards sustainable agriculture.

7. Further developments

This process could eventually lead to the definition of standards for sustainable agriculture. Unilever would welcome a recognized position in the market for “sustainable agriculture”, that is mainstream agriculture, using proven technologies, which tries to align economic principles with environmental protection and social progress. Indicator measurement results could serve to make this process transparent. Such standards for sustainable agriculture would need endorsement by a wide variety of experts and stakeholders, e.g. organisations such as FAO, the World Bank, UNEP, and NGOs etc. Market mechanisms could be developed on the basis of such standards (e.g. through certification schemes), to allow raw material buyers and consumers to express their preferences. In the long run, our agricultural sourcing policies could be based on such standards.

8. Pilot study: Peas in East Anglia

Birds Eye Wall's has been producing high-quality products for over 50 years in partnership with its growers. To complement this successful formula, the company is now working with a range of organisations who are contributing to its sustainable agriculture project. These include:

- Forum for the Future, a UK charity founded in 1996 by leading environmentalists with the purpose of taking a positive, solution-oriented approach to the challenge of sustainable development. The Forum is providing external advice on the best practice for sustainability.
- ADAS, an independent consultancy with more than 50 years experience of communicating and working with the rural community. ADAS is involved in the assessment and monitoring of some indicators.
- Soil Survey and Land Research Centre maps and monitors the soil resources in England and Wales. The organisation produced a report on the likelihood of nutrient and pesticides leaching in the

growing areas - an essential criterion needed before approaching growers for their participation.

- Environment Agency, the government watchdog and enforcer. It has supplied data on pesticides and nitrates in the growing areas.
- The Wildlife Trusts, a network of 46 local trusts and 52 urban groups working for wildlife in town and country. The trusts are helping to measure biodiversity.
- British Trust for Ornithology, an organisation of professional and volunteer ornithologists and ecologists. The Trust is helping to measure key components of the biodiversity indicators in relation to birds.
- Centre for Agriculture and Environment, a Dutch non-profit foundation that promotes sustainable agriculture. The Centre is helping to test and monitor sustainability indicators on energy balance.
- University of Essex, Centre for Environment and Society, a trans-disciplinary research centre, has advised on the development of sustainability indicators.

Out of the group of 500 growers, 21 farmers have been selected to participate in this pilot.

Zusammenfassung

Gemäss der Strategie der Unternehmung, fokussiert Unilever die Anstrengungen nachhaltige Rohstoffbeschaffungsketten aufzubauen in der Landwirtschaft (die übrigen Gebiete sind Wasser und Fischerei). Basierend auf einer "Triple P" Betrachtung (Profit, Planet und People) wurde eine Anzahl Grundprinzipien sowie ein Set von 10 Indikatoren für eine nachhaltige Landwirtschaft entwickelt. Diese Indikatoren werden nun in einer Anzahl Pilotprojekte getestet. Die Ergebnisse der Pilotprojekte fliessen in Standards für eine nachhaltige Produktion ein, welche künftige als Grundlage für die unternehmensweite Beschaffung dienen.

Schlüsselwörter: Landwirtschaft, Beschaffungskette, Indikatoren, Standards, Partnerschaft.

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