

The Chains of Agriculture: Sustainability and the Restructuring of Agri-food Markets

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Introduction

In the nine years since the UNCED 'Earth Summit' at Rio, global agriculture has been a success in production terms, keeping pace with population. But by other measures of sustainability – ecologically sound land management, vibrant and resilient rural and regional economies, social equity, and public legitimacy – the achievement of sustainable agriculture and rural livelihoods (SARL) in many countries is still a distant prospect.

A process of rural differentiation is underway, between what Reimer (1996) and Davila Villers (in Rounds, 1998) have classified as *Rural Worlds 1, 2 and 3* (Box 1). The negative aspects of these changes can be exaggerated, and misunderstand the process of diversification underway in the peasant and smallholder economy (eg Rigg and Nattapoolwat, 2001). But the continued marginalisation of small- and mid-size peasantry and family farming in both developing and developed countries, and the continued land degradation and externalities from poor or imbalanced land use, are affronts to the expectations of UNCED and the World Food Summit.

Full implementation of Chapter 14 of Agenda 21 would be a big step to resolving the root causes of major environmental and social crises, from the 'Dead Zone' in the Gulf of Mexico¹, to air pollution and haze in SE Asia, and to rural unrest in China.

Nonetheless, the WSSD is an opportunity for us to ask whether the gap between expectations and reality which has opened up during the nine years of rapid

political and economic change since UNCED can be attributed to a shortfall in scope and vision, as well as a failure of implementation.

What was agreed at Rio?

Agenda 21² is premised on overcoming the constraints to smallholder agriculture through improving access to resources and improving local governance, with the state as the primary agent of change.

The chapter in Agenda 21 on '*Promoting sustainable agriculture and rural development*' (Chapter 14) is first and foremost a call to governments, with the support of international organisations, to implement SARL. There are in this chapter around 125 calls for governments to initiate or strengthen programmes of research, extension and land tenure primarily aimed at sustaining production through conservation and management of natural resources and germplasm.

What's missing?

The Rio agreements in general and Chapter 14 of Agenda 21 in particular *overstated* the ability of the state to respond to the challenges facing Rural Worlds 2 and 3, in the face of government withdrawal from agriculture. It also *understated* two of the key constraints facing smallholder and family agriculture: *access to markets*, and *pricing*, related to the *terms of trade* between farming and the rest of the agrifood chain.

The agricultural sectors in many countries have been liberalised through privatisation and deregulation, often as result of Structural

KEY CHALLENGES:

- A responsive and accountable state should be a partner with an economically and politically organised rural civil society, to overcome exclusion from policy making and from markets
- OECD countries should dismantle all forms of intervention that distort world prices hurting the opportunities of many developing countries and, in particular, of poor rural communities.
- An ethically reinvigorated private sector should commit itself – individually and as industry associations – to its own form of Agenda 21, in which supports national rural development policies
- Civil society groups should use benchmarks and sustainability indicators to monitor performance of food processors, retailers and food service companies, especially regarding fair terms of trade.



BOX 1: Diverging rural worlds

The farmers and entrepreneurs of **Rural World 1** are a globally competitive minority (in Canada, for example, Rural World 1 comprises 5-10% of rural population) connected into the global agrifood economy. Through contracts with a rapidly consolidating agricultural handling and processing industry and even directly with retailers, these farmers are becoming an extension of agribusiness. State resources, especially subsidies and credit programmes, have benefited Rural World 1, in accordance with the political influence and economic power of large modern enterprises. Commodity supply management and price stabilisation institutions have been converted into agencies with the purpose of transferring resources to this powerful lobby (Binswanger and Deineger, 1997).

Rural World 2 is comprised of the family farmers and landed peasantry who have traditionally constituted the bedrock of the rural economy, from India to the American prairies. But low levels of capitalisation and poor integration with downstream food businesses leaves this sector exposed when governments withdraw from agriculture and liberalise agricultural trade, or when agribusiness concentrates market power (and hence profits) off the farm. Rural World 2 faces declining returns and increased risks from agricultural commodity production. Off-farm work is now the norm. This is an ageing farm population whose children are unlikely to succeed them. Niche marketing such as agritourism, organics and local markets has provided viable alternatives to a minority of Rural World 2, mainly in industrialised countries.

The livelihoods of **Rural World 3** focus mainly on survival. It is characterised by fragile entitlements, self-exploitation and unwaged family labour income, and depleted human and natural resources with livelihoods fractured into diverse mixtures of off-farm work, temporary migration and subsistence agriculture and education-trapped. Rural World 3 is globally redundant relative to food and fibre production. Indigenous groups are over-represented in Rural World 3. They are generally excluded from policy making, despite the rhetoric of 'pro-poor' development strategies. The global economy of Rural World 1 and the economy of Rural World 3 appear to be completely separate, but they do paradoxically come face to face in the apple orchards of Washington State and the strawberry fields of California. There, migrants from rural Mexico and Central America constitute the bulk of the labour force for major agro-industries.

After Bill Reimer (1996) and R Davila Villers (in Rounds, 1998)

Small farmers North and South are encouraged to deal with the withdrawal of government from the business of agricultural support and commodity trading by exploiting their comparative advantage and forging direct relations with the market.

In a perfect world, the increased risk from exposure to market fluctuations and removal of safety nets³ would be countered by improved market information and reduced information asymmetries, efficient scales of production and marketing, contract farming, and improved liquidity. Problems of quality, efficiency and competitiveness on smaller farms could be overcome through social organisation. Producer organisations⁴ and social capital⁵ – as social mechanisms to adapt to the market economy – are the means by which Rural Worlds 2 and 3 are supposed to defend themselves from being bypassed and marginalised by liberalisation and globalisation.

World markets are however distorted by dumping, especially from the EU and US,⁶ of exports at prices below the cost of production. Liberalisation of trade means that international markets set price and quality standards in domestic markets. Agriculture which is oriented towards both the export sector and internal markets must then turn out products at a similar cost and quality as those that can be bought on the world market. Access to new market opportunities in an open economy is thus predicated on an end to distortions caused by dumping.

But there are two other limitations, linked to the management of risk and dealings with markets, which introduce a strong bias within the process of liberalisation in favour of Rural World 1.

Firstly, the state has also withdrawn from investment in extension, public research, rural infrastructure and credit provision under the same fiscal constraints and donor influence that brought about economic liberalisation. This limits access to technology, information and markets, even for strong local peasant organisations.

Secondly – and the theme of this paper – is the *restructuring of markets*. Many markets are undergoing rapid change, with *closed supply chains* rapidly replacing traditional arms length or spot markets. The restructuring of markets and power relations beyond the farm gate has been underreported in the debate about sustainable agriculture and rural poverty, both North and South. The trends were considered to be typical of industrialised country agriculture rather than peasant systems. Agenda 21 reflects this: the private sector and the market hardly figure. Chapter 14 makes *no* demands of the private sector and little mention of markets. The chapter on *Strengthening the Role of Business and Industry* (Chapter 30) focuses mainly on product stewardship and technology transfer. The section on *Strengthening the Role of Farmers* (Chapter 32) contains two calls for involving farmers in policy formulation and for the support of farmers' organisations.

Liberalisation of agricultural markets *relocates risk from the state onto the individual* (McDonald, 1999), and also *elevates the importance of the private sector and off-farm capital* as arbiters of sustainability. As governments – especially in the South – withdraw from heavy involvement in agriculture, to be replaced by direct dealings between farmers and agribusiness, the gap of *private sector policy* must be addressed.

Adjustment policies, donor conditionalities and compliance with trade agreements. The state has withdrawn from interference in production activities and the functioning of markets. Structures such as marketing boards have been broken up. Many agri-food markets have experienced a rapid transition to world prices.

The chains of agriculture

Buyer-driven (as opposed to producer-driven) supply chains or *value chains*,⁷ have sophisticated forms of *coordination and integration*, and *rules of participation*. The implications for smallholder agriculture of these new forms of agri-food governance can be overstated. But as we shall see later, the rules of participation in vertically co-ordinated supply chains with privatised standards, and the rise of contracts and specialised intermediaries, are proving to be powerful drivers of divergence and marginalisation within farm communities. It is by understanding supply chains and their role in concentrating capital in the agri-food system that we get a clear understanding of agricultural markets and the future sustainability of farming.

The analysis of commodity chains has its theoretical roots in *demand* orientations informed by neoclassical economics and the notion of the sovereign consumer, as compared to the *supply* orientation of political economy (Wilkinson, 2000). A traditional political economy approach to the agri-food chain would propose that capital is accumulated through controlling the tangible *means of agricultural production*: land, labour, nutrients and chemicals, water, genetics and seeds, feed, equipment, and capital. Combining supply chain analysis and political economy reveals, however, that it is ownership and control of *intangible assets*, especially *information, brands and patents*, rather than control of the tangible means of production, that raises sufficient *barriers to competition* to allow the concentration of capital from a supply chain and the conversion of that capital into mobile financial capital (Pritchard, 2000). In other words, the governance of supply chains hinges on controlling the *means of co-ordination* rather than the means of production.

Management and control of *information* is a feature of industrial *size* and *concentration*, rather than monopoly.

Size confers logistical control, reduced transaction costs, economies of scale, improved market and meteorological intelligence, and access to and control of the most valuable intellectual property and the most comprehensive distribution network. *Size* confers 'absolute cost advantage' – the ability to outbid smaller farmers or companies for resources and ideas, to invest more heavily in research and development and patent protection (for instance, to obtain critical mass in genomics), to set predatory prices, to externalise risk, to raise external capital, and to mount lavish promotional campaigns. *Size* also confers access to information related to the workings of government that selectively benefit the company, and the ability to remould the social and political environment to an individual's or company's own benefit.⁸

Size can be achieved through acquisition or through *strategic alliance*, which is a common feature of buyer-driven chains. Global clusters and strategic alliances in agrifood industries (eg Heffernan, 1999), are examples of *corporate convergence* which is becoming the global norm. Under these conditions of '*cooperative capitalism*' (Grieder, 1997) transactions become based on *industrial relationships* rather than on open markets. These networks transcend national and transnational (eg EU) regulation.

Size and concentration in agrifood industries

The nine years since Rio have seen an astonishing process of concentration in upstream and downstream global agrifood industries.

In retailing

In both the EU and US, it is *retailers* who determine what *food processors* want from *farmers*. Retailers are the point of contact between the majority of OECD citizens and the rural economy. The supermarket sector is most concentrated in the EU, but is also rapidly consolidating in the US. In the nine years since Rio, US food retailing chains have concentrated dramatically (Hendrickson *et al.*, 2001), with the five leading chains moving from 19 percent control of grocery sales to at least 42 percent (Harl, 2001). Since 1992, global retail has consolidated enormously and three retailers – Carrefour, Ahold and Wal-Mart – have become truly global in their reach. In 2000, these three companies alone had sales (food and non-food) of \$300 billion and profits of \$8 billion, and employed 1.9 million people. It is predicted that there will be only 10 major global retailers by 2010.

In processing

Partly out of necessity to exercise countervailing economic power to retailers, processing industries are also rapidly consolidating their economic and market power. The economic power of the top 8 food multinationals have been compared to that of half of Africa. In 2000, US\$87 billion in food industry deals were announced, with Nestlé, Philip Morris and Unilever emerging as the Big Three of global foodmakers. The justification for such massive accumulation of market power is "to have more clout in the consolidating retailing environment."⁹

We are likely to see a growth in networks and cross-ownership between food processing and the seed sector, in which the farmer is contractually sandwiched, just a step away from the farmer as renter rather than owner of contracted crops or livestock (see **Box 2**).

In farm inputs

Concentration in the input sector proceeded at breakneck speed in the 1990s. Only six companies now control 80 percent of *pesticide* sales, down from 12 in 1994 (Dinham, 2000, 2001). There were \$15 billion of amalgamations in the US *seed* industry in the period 1995–2000. From a value chain perspective, input manufacturers – as suppliers to the least profitable sector of the agrifood system, namely farming – are in a strategically weak position. The level of concentration in the business is in part a desperate drive to maintain profitability against declining strategic value of chemicals, seeds and biotechnology. Value chain thinking rather than technical hubris is key to the sustainability of these industries. Survival will depend on strategic alliances with processors and retailers around food quality, safety and healthfulness.

BOX 2: Processing tomatoes as a strategic agricultural commodity

The globalisation of the Mediterranean, Mexican and Creole diets has been accompanied by a marked rise in the market for processing tomatoes. The industry is bifurcating into scale processors for the industrial paste market – such as Morning Star in California which buys 1 million tons of tomatoes each year – and the smaller branded producers. Some processing companies such as Heinz have been able to extract greater value from the industry by controlling the seed market, thus forming an agribusiness ‘sandwich’ with the grower in the middle. Heinz has 30 percent of the global processing tomato seed market, and this figure grows to 70 percent in Australia. By linking grower contracts with their proprietary seeds and germplasm, Heinz could price their elite seeds at over AU\$ 2,000/kg (1990 figures), compared with an average tomato seed price of AU\$ 70/kg. Grower influence over the value of their crop in Australia has been further diminished by state deregulation of bargaining arrangements; collective bargaining has been replaced with confidential individual contracts. Revealing contract prices is now illegal (as a ‘collusive behaviour’) under the Trade Practices Act.

Source: Pritchard (2000) and pers comm.

What does this mean for SARL?

We have seen that highly concentrated food processing, retail and food service industries, as key agents within buyer-driven chains, are able to consolidate their supply base and demand increasingly stringent levels of quality, compliance with standards and codes of conduct (including proof of ‘sustainable agriculture’ production techniques) and post-production service from their suppliers.

If valuable agricultural markets are subsumed into relatively closed supply chains governed by downstream private actors, what does this mean for SARL and the opportunities for agriculturally led development?

Participation in buyer-driven supply chains can link small farmers to the modern economy, with lower market risk and greater new markets, to inputs, and to financing. Contract agriculture, as one means of making this connection, does not (as painted by some critics) have to “turn farmers into wage labour on their own farms.” Small producers South and North can be global actors rather than perpetual victims of imposed models and global forces (eg Bebbington and Batterbury, 2001; Eaton and Shepherd, 2001).

But the control of supply chains in agrifood by clusters of powerful downstream industries has profound impacts on agriculture, especially in *weakening the link between farm prices and food prices*.

High levels of concentration in downstream processing and retailing industries mean lower levels of value-added going to local communities; 78–85% of value added in the

agrifood chain in the US and UK, for example, is *not* done by farms.^{10,11}

The farmers’ slice of the retail cost of a basket of foods sold in grocery stores shrinks further once they have paid for seeds, fertilisers, feed and machinery, finance, labour and land rental costs; again from very concentrated sector in the case of seeds and chemicals. The size of the food market also shrinks as intense retail competition and concentrated retail buying power is translated into consumer surplus. Farmers have to produce more, but get less.

During the 1990s, the average annual median return on equity for the US food manufacturing industry was 17.2%, and 18% for food retail. Over the same period, return on equity for US farming averaged 4.5% (Taylor, 1999). Benbrook’s rough estimates for the performance of US agriculture puts return on assets in the late 1990s at only 0.4%, compared with nearly four percent for Life Sciences¹², nine percent for food processing, 10.6 % for retail and 16% for food service (Benbrook, 1999).

Market access for producers to supply chains does not have much to do with classical notions of ‘efficiency’. Rather, market access is a feature of the ability to exploit *marketing advantage*, meeting large processor and supermarket demands for consistency of supply (reliable quality), speed of response, compliance with standards, and payment of fees.¹³

Coordination by supermarkets of their supply chains raises the requirements for farms and firms to stay in the market. For instance, the example of grape production in Brazil, for which Collins (2000) notes that although production costs are lower and quality higher among small-scale producers, marketing advantage accrues to large-scale producers through their better access to postharvest cold storage and refrigerated transport services. In Latin America as well as Europe and North America, there is a growing tendency for supermarkets and processors to use this form of coordination to source sub-regionally or regionally, and occasionally extra-regionally (Reardon and Berdegué, 2000), rather than locally or nationally.

As buyer power increases, so barriers to entry for smallholders to markets other than for basic commodities become more daunting. Small farmers of Rural Worlds 2 and 3 – in both South and North – often lack the strong and direct relationship with the market enjoyed by large-scale producers, such as contracts with processors or supermarkets. Buyers preferentially contract with larger farms and firms that can meet these demands, because they deliver lower transaction costs and risk. Smaller farmers with little land and capital see little benefit from the investments needed to achieve the quality and efficiency required to meet the expectations of an agribusiness processor, even in the unlikely event that they can raise the capital (McDonald, 1999). Smaller farmers also present higher per unit costs for contractors, and have greater problems meeting stringent quality and safety requirements (Reardon and Barrett, 2000). Rural Worlds 2 and 3 have experienced declining returns from agriculture, stuck in commodity activities with low barriers to entry (Kaplinsky, 2000).

Only Rural World 1 has integrated itself economically and politically with downstream actors, using its capitalisation, infrastructure, technical expertise and market

information to meet the requirements of shippers, processors and retailers, and the political influence to direct state resources in support of their interests. Yet even for this highly capitalised group it is very difficult to prevent bargaining power (and therefore profitability) from being eroded as downstream agribusiness becomes ever more concentrated. The contracts that Rural World 1 negotiates with downstream agribusiness are often low risk and low return.

Captive supply¹⁴ of livestock under contract to the large integrators, for example, is drying up markets in many countries for non-contracted animals and forcing down wholesale prices. Farmers are left with “take it or leave it” deals with a few integrators. Captive supplies of beef cattle and swine in the US are now such a large part of the livestock industry that there is no competitive market where prices can be discovered. The spread of closed contract production systems into the grain sector does not bode well for price and farm income.

Buyer-driven chains, while appearing very remote from agriculture in developing countries, are in fact making rapid inroads into areas considered to be entirely dominated by spot markets. Consider that 20–35% of the rural retail sector in Central America is already controlled by supermarkets, and that a single firm controls 60 percent of chicken purchases in Central America. Growth is particularly rapid in emerging economies of Latin America and eastern Europe. In Chile, 14 of 15 main food products are now sold through contracts between farmers and supermarkets and processors, rather than through spot markets. Thousands of small dairy operations have failed in Chile, Argentina and Brazil in the 1990s – cooperatives of small farmers and processors have gone bankrupt or suffered membership declines. In the 1990s, the share of the retail sector controlled by supermarkets in Argentina increased from 20% to 80% (Reardon and Berdegue, 2000).

Price pressure is forcing farmers into unsustainable practices in order to sustain family income from a fixed land base. Overstocking, and neglect of practices which favour biodiversity (Nowicki, 2000) or soil quality, are typical features of farming areas under price pressure.

How ‘sustainability’ can drive consolidation and marginalisation

What happens when requirements for ‘sustainable agriculture’ are introduced into established supply chains, perhaps in response to pressure from NGOs or state regulators? Standards for ‘sustainability’, such as conditions for farmworkers or techniques for soil and pest management, are part of a trend from *performance* to *process standards*. Another characteristic is that these are *private* rather than *public* standards. Private, process standards are features of buyer-driven chains, marked by “a shift in [the] centre of gravity from technical norms to reduce transaction costs in broad homogenous commodity markets, to *strategic instruments of product differentiation, agrifood chain co-ordination, market creation and share growth*” (Reardon *et al.*, 2001, emphasis added).

‘Sustainability’ as a set of process standards can provide leverage for large enterprises to control markets and *raise barriers to competition*. When a processor or retailer

develops a strategy for sourcing more ‘sustainable’ products, they can – as governors of the supply chain – push all compliance costs and risks down to suppliers. Standards and Codes of Practice thus favour well-capitalised farms (not necessarily always ‘large’ farms). ‘Sustainability’ is understood by farmers as another new set of outsiders deciding what goes on inside the farm gate – as with policies of importing countries such as ‘due diligence’ and phytosanitary standards – as a cost of contracting with vastly more powerful market players. Standards are seen as another example of the North ‘pulling up the ladder of development’ on Rural Worlds 2 and 3.

Northern environmentalism has thus been a blessing and a curse. It is an important and unwitting driver in the consolidation of Rural World 1, and may hold back smallholder farmers from building equitable (and therefore economically sustainable) trading relationships with downstream actors. The proponents of sustainability, in catalysing a public-private response which packages ‘sustainability’ into technical, regulatory and managerial frameworks, have seen the supply chains respond with another force of marginalisation of small farmers and peasants.

These issues add to smaller farmers’ growing problems of *market access* within rapidly concentrating supply chains.

How can markets be regoverned?

Governments are faced with the challenges of achieving local rural development in a period of globalisation in the agri-food system, liberalisation of markets, reduced state intervention, and a reconsideration of the role of agriculture in rural employment and livelihoods.

Despite the rhetoric of poverty reduction through access to resources (for instance, via land reform) and more inclusive governance, especially participation of rural people in policy processes – it is becoming clear that *improving governance in public policy making is not enough to reduce poverty* (Bebbington, 2001). The livelihoods frameworks provided by rural sociology, with their household and community perspective, are also inadequate tools for understanding the workings and influence of supply chains.

Control of and influence over markets is key to the circulation rather than extraction of economic assets, either within agrifood markets or through non-farm activity such as tourism where control over markets is easier.

How can public and private sector policy be reformed so that market liberalisation is an *inclusive* process rather a driver of rural differentiation? Public regulation is not geared up to deal with supply chain structures. And within the supermarket- or processor-driven supply chains, where standards and prices are dictated by distant actors, there are few opportunities for smallholders and family farmers to influence the market or exert democratic influence over agrifood futures. With growing distance between point of decision over production methods/technologies and production itself, there is a need for global governance over supply chains.

We first need to recognise the *political* nature of the rules and frameworks that comprise market structures, understanding that markets and political authorities (and

hence economic interests) are parts of the same ensemble of governance, rather than contrasting principles of social organisation (Underhill, cited in Nowicki, 2000).

Following from this recognition, there are seven ingredients for advancing the interests of equitable and sustainable rural development:

1. Producer organisations

Organisation of smallholders is widely seen as an antidote to smallholders' problems of dealing with buyer-driven chains. Developing organisational capacity among small farmers can allow extraction of more benefits and less risk from contract farming, as demonstrated by small rice-potato farmers in northern Thailand (**Box 3**). Governments and international co-operation can assist these organisations, through recognising them as partners in decentralisation, and providing a legal framework covering oversight of contracts and provision of bank credit, that enables smallholders to access lucrative value-added markets without losing out to intermediaries.

2. State support for building small producers' capacity

Governments can help players to develop new competencies for participation in supply chains, especially in meeting quality standards. There are spin-offs in raising production

BOX 3: Smallholders and agribusiness: contract potato production in Northern Thailand

In the San Sei district of northern Thailand, small (averaging 1 ha) farmers have developed a sustainable rice-potato production system, on which they have built outstanding marketing arrangements. National legislation in 1987 and 1995 emphasised the promotion of high quality value-added products for exports, through co-operation between industrial firms, farmers, and financial institutions. Efforts of local officers in co-ordinating contracts between firms and farmers have made initial establishment possible, and supported the progress of the whole industry by building the right conditions of trust between firms and farmers. Farmers have found that by growing both *processing potatoes* under contract with processing companies and *cooking potatoes* for the domestic market can spread risk and avoid over-dependence on one partner, diversifying their enterprises between *contract* and *open market* arrangements. Organisation by farmers has allowed them to effectively pull down service and resources from government authorities and local politicians. Farmer organisation in the form of a Potato Growers Cooperative has been effective in managing supply and therefore the price of cooking potatoes. *Contract farming* has helped promote the production of a quality product and assured quantity. However, the development of the modern formal contract is a long process; in Northern Thailand, it took at least 30 years.

Source: Gypmatasiri et al. (2001)

standards for the domestic market. A key role for state exists in *informing farmers about the market* to overcome information asymmetries that disadvantage remote farmers in market transactions. State support can be very beneficial in providing alternative structures to supply chains, such as school meals programmes, and local farmers' markets.

3. Strengthening the farmer's voice in the process of setting standards and codes of conduct

Standards and codes of conduct, including those for sustainability, should be undertaken as a partnership with producers rather than enforced from a distance. Standards can take into consideration local realities and aspirations.

4. Competition policy

Policies that protect markets are as important to sustainable development as policies that protect land and water. Competition policy is a valid instrument in agricultural and rural development, in penalising collusion and preventing undue concentrations of economic power. Vigorous competition (antitrust) policy must address *buyer concentration* (oligopsony) and its effects on supplier welfare and the *distribution of profits* as well as profit levels along the agri-food chain. Other tools are a legal environment which allows agricultural bargaining as a form of countervailing power, and legislation or ombudsmen to protect producers and uphold principles of fairness, full information and equity in supply chains (Boehlje and Doering, 1999; Harl, 2001).

5. Corporate ethics and private sector policy

A clear commitment by industry to move beyond its eco-efficiency positions laid out at UNCED is essential. Food retailer and processor policies affect livelihoods and environmental health right across the supply chains, way beyond the points of production and sale. Accountability of global food processors and retailers, as drivers of agrifood markets, must extend beyond their consumers, to include national objectives for sustainable development. For instance, South Africa's goal of developing rural economies around smallholder land reform beneficiaries should be supported by global agrifood corporations in their sourcing policies. Standards and codes of conduct should be accompanied by training and capacity building to ensure inclusion rather than exclusion of Rural Worlds 2 and 3 in the chain. A commitment to sharing the cost of compliance would be a small but valuable gesture.

6. Civil society scrutiny

Increased size and concentration in agrifood industries has advantages for sustainability, in that they become sensitive to scrutiny by civil society groups ('stakeholder value' – see Koechlin and Wittke, 1998), in order to defend brand equity and shareholder value. Civil society benchmarking is another pillar of improving the governance of agrifood chains. It raises public expectations for private sector support for sustainable agriculture, draws consumer and investor attention to best practices, and can be a tremendous educational opportunity.

7. Removing market distortions: Ending overt and disguised dumping of agricultural produce

Trade liberalisation exposes third countries to highly subsidised models, potentially undermining more sustainable, less intensive local models of agriculture. If one country's 'sustainability' is achieved at the expense of another's (especially by putting up fences, and by throwing surplus production over that fence), then that is not 'sustainability' at all (Vorley, 2001). Regions or countries should not build agricultural and rural policy based on a presupposition of large agricultural exports, if clear markets for those goods do not exist and/or if their status as major exporters requires large quantities of non-renewable inputs (Einarsson, 2000). There is a clear role for the WSSD to specifically support actions in other fora such as the WTO to bring an end to overt and disguised dumping of agricultural produce.

Conclusions

Massive changes are taking place in the geography of agricultural production in response to the creation of buyer-driven supply chains, governed by non-agricultural sectors and driven by global sourcing and advances in processing and transportation technologies. At the same time, we are witnessing a divergence between and within agriculturally dependent rural economies, North and South. The simultaneous integration and exclusion of communities with respect to agri-food systems mirrors the emergence of the dual economy across the farming world. A global division of labour separates a core – the Rural World 1 – from a majority of flexible and casualised smallholders, family farmers and farmworkers.

Markets are undergoing rapid change, with closed commodity chains rapidly replacing wholesale or spot markets. Highly concentrated food processing, retail and food service industries at the end of these chains are having an increasingly important impact on decisions made on the farm. Downstream processors and retailers are demanding stringent levels of quality, compliance with standards and codes of conduct and post-production service from their suppliers. Whether an apple grower in Kent, or a coffee producer in Peru, the major supermarket chains control access to consumers.

The transition of sections of the agri-food system towards co-ordinated supply is proving to be a powerful driver of divergence within farm communities, and of alienation of producers from the value of their product. Primary economic benefits are increasingly found in areas outside of production. The less money that is available to farming, the less opportunities there are to invest in diversified, sustainable systems.

The sustainable agriculture movement has been slow to appreciate these developments, and this is reflected in the *production focus* and *public sector focus* of Agenda 21. Being realistic about sustainability requires an appreciation of where control lies in the agrifood chain, and the rapid shift in balance of power from the state to the firm.

Small farmers are defending their interests under these systems. The right conditions of government policy, information technology, farmer organisation and corporate

responsibility can support fair trade between agribusiness and small farmers, and additionally improve quality and consistency of product. The survival of rural areas at the margins, in the competition for a global pool of capital, depends on the creation of those conditions without delay. ●

1. A hypoxic area at the mouth of the Mississippi, fuelled by fertilizer runoff, which has reached a record size this year (8000 km²).
2. Available at <http://www.un.org/esa/sustdev/agenda21text.htm>
3. Such as tariff barriers, supply management, price supports, production subsidies, and access to credit.
4. Cooperatives and other economic organisations to negotiate with the market, replacing the peasant unions and other political structures by which rural people negotiated with the state.
5. A broad term encompassing *the norms and networks facilitating collective action for mutual benefit*.
6. Agriculture in the US and EU are overstimulated by direct and indirect production subsidies amounting in 1999 to the tune of nearly US\$ 170 billion. *Producer Support Estimates* (value of gross transfers from domestic consumers and taxpayers to support agricultural producers) according to the OECD amounted to US\$54 billion in the US and US\$114.5 billion in the EU.
7. A *Value Chain* is an integrated customer-oriented chain controlling the supply chain from product concept through consumer purchases, continually measured for profitability and customer relationships.
8. Agribusiness has a long history of influence over supra-national trade policy, from Cargill's role as one of the principal architects of the US proposal presented to the GATT agricultural negotiations in 1987 to industry dominance of the Intellectual Property Committee that drafted the GATT TRIPs (Trade-Related Intellectual Property Rights) Agreement and the Codex Alimentarius, an international food standard body authorised under the GATT to set international food safety standards. The New York Times has written of a " *symbiotic relationship*" between the US Department of Agriculture (USDA) and "*some of the politically influential companies it regulates.*"
9. Merrill Lynch analyst Len Teitelbaum quoted in the *Agribusiness Examiner* 101, January 11, 2001, commenting on the announcement in early 2001 that Tyson was to buy IBP to create a giant US\$23 billion meat producer that will control 30% of the US beef market, 33% of the chicken market, and 18% of the pork market. Available at www.eal.com/CARP/
10. Recent figures from the UK show farmers and primary producers accounting for £8.2 billion (15%) of the gross value added of £56 billion in the UK food chain. See MAFF (1999). *Working Together for the Food Chain: Views from the Food Chain Group*. Available at www.maff.gov.uk
11. Elitzak H (1998). Marketing bill rose, while farm value declined in 1997. *FoodReview*, September–December 1998, 21–24.
12. Companies which have a business platform based on complementary pharmaceutical, chemical, and biotechnological technologies.
13. Retailers govern access to consumers, and can demand payments from their suppliers of 'Hello' or 'Street' money, 'slotting fees', 'Pay to Stay' fees, in-store advertising and promotional allowances, volume discounts or rebates, coupons, and guaranteed sales, all valued at between \$930 million and \$9 billion in the US alone, or up to 50–75 percent of the total net profit for large retailers (Hendrickson *et al.*, 2001).
14. Animals contracted by packers (livestock processors) and integrators for future delivery in order to have a predictable source of raw materials for their plants.

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