

# **Recognising and addressing risk and vulnerability constraints to pro-poor agricultural growth**

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The paper reflects work in progress towards the development of new thinking on agricultural policy in DFID. It does not necessarily reflect the views and policy of DFID.

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# Executive summary

Risk and vulnerability (R&V) are gaining importance in agricultural development for three main reasons:

1. Globalisation and liberalisation expose poor agriculturalists to increasing risk.
2. There is a growing view that reducing agriculture-related R&V does not merely fulfil a social protection (welfare) role, but is essential if the poor are to engage more fully in markets, and so has important production dimensions.
3. New tools and concepts provide new scope for addressing R&V through sectoral policies and broader poverty reduction processes.

This paper aims to introduce the concepts of risk and vulnerability to a wide audience, to provide a practical classification of these constraints and to present the main evidence and arguments on whether and how they can be addressed within a productive sector such as agriculture.

## The issue

Agricultural development plans rarely consider R&V, despite the fact that agricultural policy decisions have the potential to address these constraints in both general and targeted ways. There is a need to promote open discussion of the options, their costs (both direct and indirect due to limitation of agricultural growth) and ways in which they may be implemented.

Initiatives to reduce R&V need not become a drain on public funds, nor reduce public investment in the productive sectors. If managed well, such initiatives can enhance the engagement of the poor in markets, and so stimulate production. In addition, certain types of public investment (e.g. in infrastructure) can stimulate private investment at the same time as reducing risk.

## Risk and vulnerability as constraints to development

In summary, risk is assessed against the likelihood of shocks and stresses occurring and their potential severity. Vulnerability is the degree of exposure to risk and the capacity of households or individuals to prevent, mitigate or cope with its effects.

This paper categorises agriculture-related risk into four main groups – those related to: a) market performance, b) input and output market access, c) labour markets and d) environment-related factors. It also categorises the 'rural poor' in an effort to identify which individuals or households are affected by different kinds of risks, and how.

Rural households have many traditional ways of reducing risk (e.g. through livelihood diversification or joint management of natural resources in watersheds) and vulnerability (e.g. by selling small assets or maintaining reciprocal labour relations). More modern risk-reduction strategies include buying insurance against crop failure, loss of assets, ill health and death.

## **The role of agricultural policy**

So, how can agricultural policy complement the R&V-reducing options already available to the rural poor? While some policy changes can simply be 'mainstreamed', there is a need for additional action targeted at sub-groups if social exclusion from agriculture is to be prevented.

Policy options *within agriculture* include support for the creation of communal and individual assets, local value-addition, storage and marketing facilities, and management of buffer stocks. Reduction of transaction costs, including better regulation and legislation, would also be of benefit, as would technology policy that balances productivity enhancement with risk protection.

National agricultural departments may also have a role in promoting broader measures such as crop and asset insurance schemes, area-based development programmes, rural finance and business services, and transfers or subsidies related to food security.

Although the central focus of the paper is on public policy in agriculture, the analysis is extended *vertically*, to cover R&V-reducing strategies that can be promoted by policy at a higher level. These include:

- international trade policy, where exposure to low-cost imports and adverse foreign direct investment are major risk factors; and
- national policies (e.g. poverty reduction strategies and fiscal measures) which could generate resources for public investments and transfers, and Medium Term Expenditure Frameworks (MTEFs), which govern public resource allocation among sectors and across provinces.

The analysis is also extended *horizontally*, to consider the types of R&V-reducing measures that could be taken in other sectors and that would complement agriculture-based measures. These include small enterprise and employment initiatives that assist livelihood diversification and domestic policies (e.g. microsavings, insurance, credit and social pensions) that allow the rural poor to contribute to the economy, if not as labourers or entrepreneurs, then as consumers.

Agricultural policies that mainstream R&V reduction successfully will differ from conventional approaches in three ways:

- by trading off some growth in order to reduce risk and to generate employment;

- by identifying different constraints to market access experienced by different categories of producer or labourer; and
- by treating R&V coherently across domestic and productive spheres.

## **Areas of remaining debate and knowledge gaps**

Major areas of remaining debate concern:

- the potential for complementarity between sector-based approaches and those based on rights or entitlements;
- the efficacy of targeted approaches;
- the nature of trade-offs between growth and R&V reduction, and those affected by different approaches to R&V reduction;
- how location-specific conditions might best be addressed; and
- how priorities for R&V reduction might be set, and how they may be funded.

The analysis suggests a number of specific knowledge gaps in relation to R&V reduction in agriculture. For instance, we know little about:

- how the links between social protection, agriculture and gender are played out in relation to women's practical and strategic interests;
- how the private sector might best be supported in designing and marketing new and appropriate R&V-reducing tools, including microsavings, credit and insurance; and
- the actual means by which people break out of poverty and become more involved in agricultural production and the wider economy

## **Conclusions**

The general conclusion is that reducing R&V is at least as much about improving the implementation of existing ideas and practices as about filling knowledge gaps. In this respect, the paper offers a number of policy suggestions for further debate and, eventually, for incorporation into action agendas.

- The priority is to 'mainstream' R&V-reducing measures within policies focusing on agriculture and related spheres. Experiments in reducing R&V need to be shared within and across countries, and innovative practices should be promoted.
- Some countries need to strengthen the implementation of their existing policy measures.
- Both new and existing measures need to be inserted into 'new architecture of aid' vehicles such as Poverty Reduction Strategy Papers (PRSPs), MTEFs and direct budgetary support, where there is currently

very little or no discussion of R&V reduction within the productive sectors.

- There is a need to strengthen national capacity to assess and evaluate trade-offs between measures that promote growth and those that reduce R&V, and the different instruments for achieving R&V reduction, both within and across sectoral mandates.

The paper focuses on R&V in relation to agriculture, and does not address wider vulnerability issues faced by those unable to engage fully within the productive sector. To some degree, vulnerability will be reduced as assets are retained, created or strengthened. Livelihood diversification away from traditional low-income farm and non-farm activities is the most likely route towards this goal.

## **1. What is the issue and why is it important?**

The objective of this paper is to introduce to a wide audience the concepts of risk and vulnerability (R&V)<sup>1</sup>, to classify R&V in ways that are useful for agricultural development? professionals or practitioners, and to discuss how R&V can be addressed from within a productive sector such as agriculture.

Economists define *risk* as the probability of occurrence of shocks and stresses, multiplied by the likely cost of these to the communities, households or individuals concerned. Shocks and stresses can be either internal or external to the household. Risk can be idiosyncratic or covariant (i.e. affecting only one household or many simultaneously). It can occur on different scales and requires scale-specific responses.

*Vulnerability* is the degree of exposure of communities, households or individuals to such adverse events, and their capacity to prevent, mitigate or cope with them. This adaptive capacity has also been termed 'social resilience' (Bradley and Grainger, 2004).

Risks are of many kinds: health, social, natural, environmental, political and economic/market-based. Whilst all of these are touched upon in this paper, the focus is on economic/market-based and natural/environmental risks.

The concepts of R&V are gaining importance in agricultural development for three main reasons:

1. Globalisation and liberalisation expose poor agriculturalists to increasing risk.

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<sup>1</sup> There is a connection between risk and vulnerability, in that successful risk reduction will increase and/or stabilise incomes, which can then be invested by the household, individual or community in vulnerability-reducing assets. So, for simplicity, 'R&V' are generally mentioned together throughout the paper. But vulnerability is treated separately where it requires specific additional measures focused on the characteristics of the household, such as location, assets, health, education etc.

4. There is a growing view that reducing agriculture-related R&V does not merely fulfil a social protection (welfare) role, but is essential if the poor are to engage more fully in markets, and so has important production dimensions.
2. New tools (e.g. new forms of crop insurance) and concepts (e.g. dealing coherently with domestic and production-related R&V) provide new scope for addressing R&V and can be built into sectoral policies and broader poverty reduction processes such as Poverty Reduction Strategy Papers (PRSPs), Medium Term Expenditure Frameworks (MTEFs) and Poverty Reduction Budgetary Support (PRBS).

The poor benefit from agricultural growth either through *productive activity*, in which markets play a central role, or through *subsidies and transfers* funded through taxation. There are choices or 'trade-offs'<sup>2</sup> to be made along the complete spectrum of public expenditure possibilities. These range from, at one extreme, policies that 'go for growth' with little R&V reduction built in, to the other extreme, to policies that focus heavily on R&V reduction through social sector expenditure, but contribute little to growth, and may 'crowd out' public investment in productive activities, and/or discourage private investment and initiative.

However, there is a growing view that some measures designed to reduce R&V faced by the poor are not only beneficial to social welfare, but also help people to engage in productive activity (Johnstone, 2004). By the same token, *not* protecting the poor against R&V may result in a loss of productive assets, and thus a disengagement from productive activity<sup>3</sup>. There is thus an intimate link between livelihood protection and the promotion of productivity (Farrington *et al*, 2004; 2004a).

The major issue is that R&V are rarely considered within agricultural (or other productive sector) development plans, yet agriculture is inherently risky in areas without irrigation (i.e. large parts of South Asia and virtually all of sub-Saharan Africa). Agriculture is also being exposed to increasing market-related risks. Potential exists for making policy decisions in agriculture (e.g. regarding public investment or service delivery) in ways that can help to reduce specific kinds of R&V for specific categories of the rural poor. There is a need to promote open discussion of these options, to assess what they might cost (either directly, or in terms of reduced economic growth through trade-offs), and to decide how they may be implemented.

There are several related issues:

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<sup>2</sup> The economists' term 'trade-off' is used throughout to capture the idea that, for instance, a 'gain' in terms of risk reduction from using a pest-resistant crop variety may have to be traded off against a 'loss' in average crop yield potential. In statistical terms, the mean seasonal yield is reduced, but the inter-seasonal variance about the mean is reduced substantially, so that in welfare economics terms, there is a net gain overall.

<sup>3</sup> Jalan and Ravallion (2003) found that households can take several years to recover from a single income shock, and that the poorest households recover slowest.

- Markets are changing rapidly but continue to function imperfectly for the poor. Many perceive market activities as 'too risky' and therefore do not become involved at all. Reducing the perceived risks can provide social protection and promote engagement in productive activity.
- Social discrimination based on gender, caste, class and/or creed may also exclude the poor from economic and social activities, and so exacerbate R&V.
- Money is 'fungible', i.e. can be transferred between productive and 'domestic' budgets to meet shocks and stresses when and where they arise. It follows that policy should simultaneously seek to reduce R&V in the domestic as well as in the entrepreneurial sphere<sup>4</sup>.
- Sequencing of R&V-reducing measures may be important. Where households have at least one member who is capable of working in the productive economy, it may be necessary to first reduce R&V in their domestic situation before encouraging them to become more engaged in productive activity.

Table 1 attempts to capture the main ways in which agricultural policy committed to reducing R&V would differ from a more conventional approach.

## **2. Current evidence – what do we know?**

### **2.1 Changing perceptions of risk and vulnerability in agriculture**

Schultz's (1964) thesis suggested that small-scale farmers are 'poor but efficient' and was an important step in recognising the rationality of their decision-making. This conclusion was reinforced by much of the early work on risk reduction via intercrops, relay cropping and sequential decision-taking (see Norman, 1974; Collinson, 1972 and Mellor, 1966). The Department for International Development (DFID) and other bilateral donors supported a large number of such 'farming systems' programmes in sub-Saharan Africa and South Asia in the 1970s and 1980s. In parallel, the World Bank addressed R&V largely through Integrated Rural Development Programmes in the 1970s and 1980s.

In the 1990s, study of livelihoods perspectives allowed researchers to make a broader assessment of the types of 'vulnerability context' that influenced livelihood strategies and the ways in which the poor could draw on (and build

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<sup>4</sup> For short, these are referred to throughout as 'entrepreneurial risks', but given agriculture's exposure to natural hazards and imperfect markets, this can be interpreted more widely than the fairly narrow types of business risk usually associated with running an enterprise.

up) capital assets to reduce their R&V (e.g. Carney, 1998). At the same time, the neo-liberal prescription that the state should merely 'facilitate and regulate' market development was increasingly recognised as an inadequate strategy for reducing R&V among the poor. As state control of agriculture was withdrawn, private enterprise rarely filled the gap left behind, and generally failed to generate growth or reduce vulnerability to risk.

There were two further concerns, especially but not exclusively relevant to South Asia – those of 'segmented' and 'interlocked' markets. In the former, the poor were largely excluded from certain markets on grounds of gender, caste, class or religion. In the latter, the poor attached themselves to a local patron as an informal R&V-reducing arrangement, only to find that such patrons controlled their engagement with labour, credit and other markets, often on unfavourable terms. The perception of researchers was that problems of segmentation and interlocking were profoundly structural and could not be tackled by 'facilitation and regulation' but required more fundamental and often specifically targeted measures.

From the mid 1980s to late 1990s, the World Bank promoted the concept of 'safety nets', which were designed to catch the victims of economic reform programmes. Its Social Risk Management (SRM) framework (World Bank, 2001) developed these to become 'trampolines', which aimed to help those dropping out of productive activity to 'bounce back' (Conway and Norton, 2002). This was an explicit attempt to get risk management onto the mainstream development agenda.

## **2.2 Main entrepreneurial risks and how they have changed over time**

The capacity of poor people to adapt their strategies to accommodate risk and reduce vulnerability has been well documented (e.g. Mortimore, 1989; Ellis, 2000; Bradley and Grainger, 2004). Households typically respond to perceived risk in two broad ways. *Risk management* strategies involve entering into low-risk activities or diversifying into portfolios of activities with differing profiles, for example growing more drought-resistant crops, entering into petty trading or firewood collection, seasonal migration etc. *Risk coping* strategies include activities that cope with the consequences of risk. Two types are commonly observed: self-insurance using savings (e.g. in the form of small livestock that can be sold off when the need arises) and informal mutual support mechanisms, where members of the group or community transfer assets to each other in times of need, typically on a reciprocal basis.

Types of risk can conveniently be classified by scale (micro, meso and macro; with macro-level risks typically being covariant, i.e. affecting many households simultaneously). However, the boundaries between the different levels are fairly arbitrary. The types of risk identified by the World Bank (see Table 2) for the different levels go well beyond agriculture. However, this paper is mainly concerned with natural/environmental and socio-economic risks. The prominence of different kinds of risk has changed over time; for

example, with the spread of irrigation, weather-based risks have declined in some areas. By contrast, the privatisation of parastatals responsible for product purchase and buffer stock maintenance has increased price fluctuations in some countries, and this is exacerbated where national self-sufficiency in basic staples is being reached and/or globalisation brings exposure to lower-price imports.

In many countries, efforts to reduce risks affecting the rural poor have to be undertaken against a background of widespread rural poverty. Commonly, two thirds of a nation's poor may live in rural areas, of which 60% are remote with weakly integrated market-oriented infrastructure and institutions. Agricultural growth in these areas has often been slow and people are increasingly moving out for part or all of the year to take up work elsewhere. Although this may help them to diversify against certain kinds of risk, it also exposes them to new kinds. Official surveys typically underestimate the contribution to household income of these 'secondary' economic activities, so that governments are ill prepared to support the rural poor in overcoming the risks that they present.

Another factor is the HIV/AIDS epidemic that is affecting many countries (Topouzis, 2000; Shah et al., 2002). It has had the effect of reducing productive capacity and, at the same time, it places additional demands on the domestic sphere (demanding medicines, special foods and the time of carers). This kind of threat reinforces the arguments given below for joint treatment of R&V in both domestic and productive spheres. Households affected by HIV/AIDS are more vulnerable to most risks outlined in Table 3.

Table 3 contains examples of risk-reducing measures typically practised by the poor themselves (column A) and those that represent options for 'mainstreaming' within agricultural policy (column B). Column C gives examples of risk-reducing measures that could be taken at higher policy levels (e.g. those concerning foreign trade and fiscal or monetary policy) and these options are discussed further in section 2.4. This 'vertical' dimension is complemented by a 'horizontal' one (column D), which gives examples of risk-reducing measures that could be taken by other government departments paralleling agriculture, such as rural development or social welfare.

Segmentation of the poor is important in identifying the types of risk they face, and how they might be vulnerable to them. The poor can be microentrepreneurs (i.e. farmers in this case), and/or labourers and/or consumers<sup>5</sup>. The category(ies) of the poor to whom each of the agriculture-related risks apply is presented in the final column of Table 3.

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<sup>5</sup> All entrepreneurs and labourers are consumers, but the reverse does not apply: those unable to engage in the productive economy are consumers without being labourers or entrepreneurs. Many have diverse livelihoods and for part of the year they may be farmers (entrepreneurs) but, for the remainder, they are labourers. Studies of households that have escaped poverty find that in more than 80% of cases, the decisive factor was that the head of the household found a new job (World Bank, 2004).

### **BOX 1: R & V – summary of current situation**

- The perception of high R&V among the rural poor discourages them from engaging in productive activity and their incapacity to cope with R&V may lead to loss of productive assets; reducing R&V is therefore likely to enhance productivity as well as equity.
- The fungibility of money suggests that domestic and entrepreneurial R&V should be treated simultaneously.
- R&V should be addressed by both mainstreamed and targeted approaches.
- There is substantial unexplored scope for mainstreaming R&V reduction within productive sectors such as agriculture.

## **2.2 The role of policy**

It is difficult to attribute observed events to specific policy action (or inaction) in relation to R&V reduction. However, circumstantial evidence suggests that a link can be made. For instance, agricultural development plans typically focus on promoting growth (increasing yield, annual cropped area, irrigated area etc.) and rarely refer to the need to reduce the variance (spatial or temporal) around rising production trends. Variance is a strong indicator of risk. The stronger the 'push for growth', the higher the risk due to susceptibility to pests, diseases and drought, or, for products geared to specific markets, the higher the risk due to market price fluctuations. This factor, together with the presence of farmer tradition in devising risk-reduction or avoidance practices, suggests that there is abundant scope within the mandates of agricultural departments to introduce risk-reduction policies, partly by re-examining and building on traditional practices.

Much the same argument applies to employment generation – a crucial issue for the poor who have only their labour to sell, but one that agricultural policy tends either to ignore or to work against (as when subsidies apply to labour-replacing machinery). The question of whether enterprises can remain competitive and yet be more labour absorbing is a crucial one. It makes sense, then, to reduce the variance around average yield, and increase the employment effects of growth, and these should, arguably, become objectives of agricultural development.

However, some observers argue that R&V reduction through agricultural policy alone will be insufficient, and that additional policy measures in both *vertical* and *horizontal* planes will be required. Examples of such measures are reviewed in sections 2.4, 2.5 and in Table 3, but, briefly, the vertical plane comprises policy formulation in overarching ministries and departments such as ministries of finance, external trade etc. The horizontal plane comprises ministries and departments dealing with areas other than agriculture in which the rural poor might engage, or which might affect them, including rural

development, infrastructure, water supply, irrigation and drainage, wildlife, tourism and labour.

## 2.3 R&V reduction via agricultural sector policy

At the agricultural and natural resources sector level, a wide range of options exists<sup>6</sup>, including:

1. Promoting investment in *value-addition*. Suppliers of raw materials tend to face stronger price fluctuations than do those of finished or semi-finished products. Investment in appropriate processing, storage and marketing facilities will therefore be necessary, both to retain income in or near areas of production, and to reduce fluctuations in that income.
2. Promoting *farm-level diversification*, so that risks are spread across a number of enterprises. The dangers of specialisation are well illustrated by a Malawi farmer's remark following the collapse of the market he had only recently entered: 'we can't eat tobacco' (Hulme, personal communication).
3. Introducing agriculture-related *legislation and regulation*, such as reform of land tenancy and inheritance legislation, minimum wage legislation (and enforcement), and ways to make markets work better for the poor. This includes pressure to reduce excessively high phytosanitary requirements, as imposed by the Organisation for Economic Co-operation and Development (OECD) importers, and efforts to reduce the (often cosmetic) standards imposed by supermarkets, which are increasingly impacting negatively on small producers (see Working Paper 13 in this series). In India, even in states that officially recognise the right of female inheritance, it is usually males who inherit land. In some contexts, the formalisation of hitherto informal arrangements (e.g. over access to resources), may exclude 'outsider' groups who have enjoyed access under traditional arrangements.
4. Public investment in *buffer stocks* is, in principle, an effective way of evening out seasonal price fluctuations. However, practical experience has yielded mixed results. For instance, in India, powerful farmer lobbies have kept floor prices excessively high, resulting in grain 'mountains' in excess of 60 million tonnes, much of it in poor condition, and with chronic problems of pilferage and ineffective distribution to consumers (Deshingkar and Johnson, forthcoming).
5. Long-term international price decline in many agricultural commodities, together with short- and medium-term fluctuations, pose considerable risk, but views are sharply divided on appropriate responses. Although it appears to be an appropriate response, attempts by the major

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<sup>6</sup> These are summarised in Column B of Table 3 and related to specific kinds of risk. They are discussed here in the same sequence as in Table 3, though, as noted in the table, some responses apply to more than one kind of risk.

producing countries acting in consortium to *restrict supply* have failed to improve the situation. There are also serious doubts<sup>7</sup> over the feasibility of *commodity hedging* schemes of the kind being developed by the World Bank (Varengnis, personal communication).

6. *Promoting the social and human capital* required for new approaches to resource access, such as in the work of the Intermediate Technology Development Group (ITDG) in supporting negotiating capacity among pastoral groups in northern Kenya (Berger, 2003). Similarly, supporting efforts to undertake traditional risk-reducing measures more fully, for example preparations for seasonal flooding in low-lying areas, such as waterproof seed storage and planting flood-resistant tree varieties<sup>8</sup>.
7. *Promoting appropriate insurances*. Crop insurance schemes potentially mitigate risk but have been largely abandoned owing to the high administration costs of collecting the premiums and verifying claims. Also, the covariant nature of major risks (attributable to adverse weather) mean that only the biggest insurers can withstand the large number of simultaneous claims likely to be made. New approaches rely on weather reports for a particular area as a 'trigger' for payments to affected farmers (Hess, 2003) and these can reduce administration costs. However, work needs to be done to pilot different modes of implementation of such schemes. Insurances of many other kinds would also assist in mitigating or coping with risk. These include insurances for assets such as livestock, equipment or structures. They also include occupational schemes for injury and sickness. However, markets for insurances of these kinds remain underdeveloped.
8. *Reducing transaction costs and risks*. Efforts to reduce transaction costs and risks often require public investment in transport, storage and communications infrastructure, and are discussed in section 2.5 (as part of the mandates of ministries parallel to agriculture). However, important initiatives can be taken within agriculture, such as public funding for the start-up of market information systems. Initiatives are also being taken by some larger private sector trading companies. For example the India Tobacco Corporation (ITC) *e-choupal* places a computer in the hands of a (usually medium- or large-scale) farmer in a village, who commits to sharing information with a peer group. Internet connections are also provided, and farmers are able to obtain daily updates on what price will be guaranteed by the ITC for delivery of a given quality of crop to a specified depot (ITC, 2003).
9. *Support to small-scale farmers and labourers to organise (possibly unionise) groups* may offer important possibilities for reducing the

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<sup>7</sup> See the DFID Natural Resources and Agriculture Team's electronic discussion forum: <http://dfid-agriculture-consultation.nri.org>

<sup>8</sup> Extensive references to work on disaster preparedness and mitigation can be found in two networks that ITDG helped to develop: La Red ([www.desenredando.org](http://www.desenredando.org)) in Latin America and Duryog Nivaran ([www.duryognivaran.org](http://www.duryognivaran.org)) in South Asia.

transaction costs of breaking into new markets, and/or preventing exclusion.

10. *Support to skills enhancement* will be necessary if low-skill labourers are to be assisted in finding new job opportunities.
11. *Pursuing crop and livestock policies that seek to balance growth and risk reduction.* The highest-yielding technologies are often also the highest risk, requiring heavy farm investment in equipment and inputs such as agrochemicals. The growth of private sector research and support services in support of these requires the definition of new roles for public sector services. In part, this requires the re-establishment of research support to farmers' traditional choices of crop, crop mix and sequence, and crop/livestock mix, designed to provide moderate productivity with high protection against generic risks (such as pests, diseases and weather). But it also requires new initiatives such as the investigation and promotion of biopesticides and soil ameliorants, which reduce the threat of some market-based risks. New public sector roles must also include regulatory pressures on private providers (e.g. agrochemicals) to adhere to standards, provide adequate information to buyers and, ultimately, to set up self-regulating bodies.
12. *Promoting employment generation* as an objective of agricultural policy, along with farm productivity enhancement and risk reduction. This should be pursued in close collaboration with other government departments responsible for labour and employment. Public works have long featured as a means of employment generation during periods when little other work is available (e.g. in India). Yet the focus is predominantly on new construction, leaving ample scope for the rehabilitation of agriculture-related infrastructure such as irrigation channels or water storage tanks.
13. *Introducing area-based agricultural and natural resources policies* offers particular risk-reducing opportunities for many of the same reasons as the wider public investment policies discussed above. Area-based policies became unpopular at the time when many donors pulled out of Integrated Rural Development Programmes (IRDP)<sup>9</sup>, but many OECD countries and blocs, such as the European Union (EU), have introduced vigorous policies to redistribute resources from central and/or wealthier zones to more impoverished ones. The provision of basic infrastructure and capacity building for new industry, low-interest credit and tax-breaks are among the many instruments used. Clearly, it is unreasonable for reform-minded international agencies to reject developing countries' regional policies as simply 'more subsidy' when such policies are widespread in the North. For agricultural development and risk-reduction purposes, it is convenient to distinguish between

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<sup>9</sup> The pendulum swing out of IRDP was prompted by views that many were overambitious in seeking to advance on many fronts simultaneously, that they set up parallel investment prioritisation and service delivery mechanisms, and they offered emoluments that drew the better staff out of the public sector.

areas that are well integrated into market-oriented infrastructure and institutions, and those that are weakly integrated. The latter face a very limited range of growth prospects, and a generally high incidence of generic-type risks<sup>10</sup>. There may be considerable merit in seeking out investment opportunities that generate improved combinations of productivity and risk reduction, and in defending such spheres of comparative advantage as are already enjoyed by weakly integrated areas. These might include forest, fish and open-range livestock production. There is no suggestion that such patterns should be maintained for all time – rather that policymakers should be sure that market-driven alternatives, such as peri-urban livestock production, fully reflect the social and environmental costs that they incur. They might also consider the basic welfare economics question of whether a dollar gained by relatively wealthy consumers of livestock products through market expansion in peri-urban areas has the same, or lower, social value as a dollar lost by poorer, more remote producers as their markets are captured in this way. If it is of lower value, then this opens the way for an element of protection to producers in the more remote areas – not necessarily on a permanent basis, but at least to cushion transitional shocks.

14. *Investing in communal assets*, including soil and water conservation structures, to reduce the risk both of catastrophic events (e.g. landslides and flooding) and of chronic processes (e.g. soil erosion, lowering of underground water tables). Other forms of communal investment, such as gravity irrigation schemes, can have powerful risk-reduction effects.
15. *Promoting investment in individual assets*, especially those such as small livestock and trees, which can be sold in small, divisible amounts to meet shocks and stresses, and the promotion of small kitchen gardens to protect against rising prices and/or scarcity in local markets. Such support might, for instance, take the form of provision of appropriate genetic material and technical advice.
16. *Transfer payments*. More enduring forms of subsidy provide one of the few examples within agriculture of transfer payments, although they may not have been conceived in this way. For example, the Malawi Starter Pack scheme (later renamed Targeted Inputs Programme) was introduced in 1999 to help low-income farmers obtain improved seed and fertiliser after prices (especially of fertiliser) had risen rapidly following economic reforms. The objective was partly to stimulate supplies of basic grains to meet national food security requirements. Longer-term subsidies are now seen as an unrealistic prospect and livelihood futures are seen to lie much more in agricultural diversification or off-farm employment than in single commodity farming. Such subsidies are unlikely to help towards diversification. However, the transition to agricultural diversification is likely to be a

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<sup>10</sup> See Table 3 for examples

long-term one, and 'starter packs' can provide a cost-effective mechanism for maintaining rural livelihoods above destitution level in the meantime, especially in the context of rapidly diminishing farm holding sizes and declining soil fertility (Levy et al., forthcoming).

## 2.4 Higher level policies (vertical expansion)

Policies at the higher level can reduce R&V *directly* e.g. by pressing for changes in tariff and non-tariff barriers to international trade and investment<sup>11</sup>, or *indirectly* e.g. via fiscal or monetary policy. A change in interest rates can help farmers to cope with shocks and stresses, while a change in taxation arrangements can influence both the amounts available for compensatory or other transfer payments and the 'progressiveness' with which tax revenues are generated. Transfers might also be influenced by the ways in which MTEFs are set up. The PRSPs represent one of the most pervasive instruments for prioritising poverty-focused measures and potentially include those concerning R&V reduction. However, in reality, few have entered this level of detail. Within the broad frame of higher-level policies, there are several possibilities<sup>12</sup>:

1. At the level of *international policy towards trade and intellectual property rights (IPR)* (and related policies, e.g. on exchange rates) there is considerable potential for risk reduction<sup>13</sup>. Tariff reductions, in principle, offer improved prospects to exporters, but expose domestic producers to the risks associated with greater competition. For instance, producers of silk in India have recently suffered as a result of increased Chinese imports as tariffs are restructured, as also have edible oil producers. Countries facing high transport costs to international markets are protected to some degree from cheap imports but, by the same token, would-be exporters located there cannot easily take advantage of the new markets that open up as tariffs fall.
2. Changes in tariff regime may leave some countries (and products) excessively exposed. More work needs to be done on *getting tariffs right* and on reducing non-tariff barriers, such as those imposed by OECD sanitary and phytosanitary requirements<sup>14</sup> and by supermarket purchasing practices<sup>15</sup>.
3. North-based concentrations of power at particular stages in processing/marketing of particular commodities works to the

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<sup>11</sup> There are, however, fundamental questions over the efficacy of the 'export-led growth' model being advocated by international agencies in the wake of economic reform programmes, especially when this relies heavily on agricultural commodities, given that they are subject to long-term price decline as well as to oversupply-induced short-term price fluctuations. More generally, there are also questions over the justification for OECD countries to press economic reforms on developing countries, when subsidies paid to their own farmers amount to some US\$ 1 billion per day.

<sup>12</sup> These are presented in the same sequence as in Column C of Table 3.

<sup>13</sup> These arguments are expanded in, for instance, the recent DFID Natural Resources and Agriculture Team's electronic discussion forum: <http://dfid-agriculture-consultation.nri.org>

<sup>14</sup> See e.g. Working Paper 11 in this series.

<sup>15</sup> See e.g. Working Paper 13 in this series.

disadvantage of developing country producers. Coffee is a striking example. There is a view that nothing short of vigorously implemented *international anti-trust policy* will be adequate to make markets such as these function in a more pro-poor fashion<sup>16</sup>.

4. National '*affirmative action*' policies on skills-building and empowerment for disadvantaged groups can help them to overcome some of the risks and other barriers that they perceive in relation to entering new markets for products, inputs and labour, as can new (and firmer implementation of existing) legislation banning discrimination. Equitable national policies on health and education can also increase the prospects for diversification for poorer groups and reduce their vulnerability to diminishing opportunities in some traditional occupations.
5. National policies on the *spatial and substantive focus of public investment* can help to generate livelihood diversification and so reduce risks by spreading them.
6. The rapidly growing acquisition by multinational corporations of *intellectual property rights* to plant and animal genetic resources, combined with their growing share of overall expenditure on agricultural research poses particular problems, one of which is the increased promotion of high-performance varieties<sup>17</sup>, often requiring high levels of purchased inputs, and often having characteristics suited to particular, narrow markets, sometimes controlled by the same multinationals. While an individual farmer growing several such crops might spread his risk, the tendency overall is towards individual specialisation, which tends to increase risk.
7. The penetration of developing country markets by multinational supermarkets is increasing rapidly and the supermarkets are imposing new product standards and buying practices on commodity chains. These increase levels of risk for some producers and exclude many altogether<sup>18</sup>. Given that many of these standards are cosmetic and serve only to increase the profits of supermarkets, there are powerful reasons for seeking greater *corporate social responsibility* (CSR) on the part of supermarkets (in this case, towards producers, whereas it has traditionally been towards consumers) combined with better *regulation of supermarket practices* and *capacity building* among farmers to meet the new standards. Where appeals to CSR do not work, it may be necessary to address these issues through regulatory regimes or through conditions attached to foreign direct investment (FDI).

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<sup>16</sup> See, for instance, the international trade section in <http://dfid-agriculture-consultation.nri.org>

<sup>17</sup> These are generally hybrids that lose their characteristics if the seed is saved over several seasons. Research into open-pollinated varieties (which can be saved by farmers) has correspondingly been reduced. Those advocating food sovereignty are particularly critical of the spread of IPRs over farmers' basic food varieties.

<sup>18</sup> See also Working Paper 13 in this series.

8. National policies on *gender and employment* rights and conditions can reduce the risk faced by specific groups in entering new markets, and national policies on *microsaving* and *personal insurance* can help to generate risk-reducing or risk-coping assets and protection measures. Such policies may include support for microsavings and credit schemes (possibly on the Grameen Bank model) and/or the provision of microinsurance against sickness, injury and death. However, microfinance institutions have been associated with a number of problems. For example, they have tended to focus on non-farm at the expense of agricultural (particularly crop) activities, and they have focused far more on microcredit than on other possibilities such as personal insurance. Consequently, ways to redress these imbalances need to be explored.
9. *Regular payments*, such as social pensions to the elderly and widows, allowances to orphans or the disabled, school fee allowances, school meals etc. can help reduce R&V. The transfer of funds to those unable to engage in the productive economy is regarded by some as 'little more than a handout'. However, as Johnstone (2004) argues, transfers need not be 'a pure consumption cost'. They can support production in two broad ways. The first is by targeted transfer of resources on the basis of need, which are delivered only when the recipients have completed a set of actions (usually investment in their own human capital). Examples include food (or cash) for work, and food for education. The second is by investing in the maintenance of human productivity in the long-term, particularly in those who would otherwise suffer irreparable damage, physically or economically. Obvious examples include the long-term damage to health of severe malnutrition in early childhood, the failure of orphans or street children to attend school, and the sale of household assets, such as land or livestock, in times of crisis. Financial 'safety nets' can offer protection against all these. In all events, while such transfers may be too small to allow a build-up of assets, they do at least allow the recipients to engage in the economy as consumers, and may allow existing informal intra-household resource transfers to be switched into productive activities such as agriculture. Further, evidence from South Africa (Devereux, 2003), suggests that part of the social pensions paid to the elderly are invested in productive activity.
10. Through commitments to *international conventions* on the sharing of river waters, the maintenance of biodiversity and the use of forest for environmental purposes, governments can promote access to and use of resources in R&V-reducing ways.

## **2.5 Policies in departments other than agriculture (horizontal expansion)**

Policies complementary to agriculture in their R&V-reducing focus, but under the mandate of departments other than agriculture, include the following<sup>19</sup>:

1. Improved *transport and communication infrastructure*, particularly to address problems of high transaction costs.
2. Improved definition and enforcement of *contract law* and the strengthening/enforcement of *law and order* more generally.
3. Promotion of *personal insurance* (health, injury, death) and insurance for the *loss of or damage to assets* other than agricultural assets.
4. Reassessment of *non-agricultural use of rural space* (e.g. protected areas, wildlife protection<sup>20</sup> and eco-tourism), which may contribute little to the incomes of the rural poor (or to the stability of their incomes).
5. Improvement in *labour conditions* across a range of occupations. This includes supporting those unable to access agricultural markets to diversify into non-agricultural options, including the rural non-farm economy and unskilled or semi-skilled work in urban areas. Measures such as the introduction of business development services may be appropriate here, as well as support for skills development, information on urban opportunities, transport and telecommunications services, and provision for migrant workers (hostels, remittance mechanisms, schools for their children). Public works schemes can provide food and/or cash income when little other work is available. Providing microfinance can help to maintain investment and consumption needs. It can prevent labour markets becoming reliant on casual labourers (and therefore encourages more stable incomes for labourers) and also supports people's more traditional and 'interlocking' arrangements for reducing their vulnerability to shocks and stresses.

## 2.6 Treating agricultural and domestic R&V coherently

When formulating policy to include appropriate R&V-reduction measures, it is important to take account of the different types of shocks and stresses that occur in the productive and in the domestic spheres. Domestic shocks and stresses can be substantial and may lead to large resource flows out of productive activities, such as agriculture. For instance, field survey evidence from India (DFID/ODI, 2002) indicates that in Madhya Pradesh, expenditures on marriages, health and funerals average some 24% of annual net income. The largest cost is for marriage, especially for daughters, followed by health and funeral-related expenditures. On average, this cost is double the amount spent on agriculture-related investment. These domestic costs are

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<sup>19</sup> This follows the sequence of column D in Table 3.

<sup>20</sup> 'Social impacts' (i.e. those which deprive the poor of land and therefore exacerbate R&V) remain of peripheral concern to many conservationist non-government organisations (NGOs). Protected areas have expanded rapidly since the 1970s.

disproportionately high – approximately 30% of average annual income – for poorer households. In addition, the average figures disguise the size of some levels of expenditure. Some households paying for a daughter’s marriage spent three times their average annual household income on this one event. Such households have a high risk of being plunged into a downward spiral of borrowing and asset loss from which they cannot recover.

These data suggest that such high expenditures on marriage, health and funerals will inevitably draw funds away from entrepreneurial activity. This may happen directly or indirectly – most of the social expenditure funds were borrowed from friends, relatives or moneylenders. Revenues from productive activity are then directed towards repaying loans, and the household will be unlikely to obtain further credit until the loan is repaid.

The policy implication is therefore to design and implement measures to reduce R&V in a coherent fashion, balancing entrepreneurial and domestic needs. Table 4 suggests several ways of supporting R&V reduction for the domestic sphere. Closer coherence between interventions in domestic and productive spheres can help to avoid negative interactions, for example, when poor timing of food aid leads to a disruption of local agricultural markets.

### **3. Areas of remaining debate and disagreement**

Governments and donors face a major task in mainstreaming R&V reduction into policy decisions at several levels, progressing from international, through national, to sector-specific. Conventionally, interventions to support growth (even pro-poor growth) have neglected the scope for risk reduction and for building on traditional risk-preventing, avoiding, mitigating or coping mechanisms. Such considerations should play a much stronger role in PRSPs, the design of PRBS and the construction of MTEFs than they have done in the past. In addition, there is an interesting discussion to be had on how far the conventional role of departments of agriculture can be extended into more mainstream social protection. For example, through subsidy intended to stimulate the uptake of new practices, or even certain types of transfer (such as the Malawi Starter Pack Scheme).

The bulk of the mandate for specific social protection measures lies with departments other than agriculture, but social protection should be undertaken in coherence with more agriculture-specific measures. Measures falling under the mandate of other departments include social insurance, social assistance (i.e. non-contributory, tax-financed benefits, in cash or kind, provided to certain categories considered vulnerable – e.g. the provision of free school meals), and assorted other measures, such as microfinance services, or employment support such as public works programmes.

#### **3.1 Different development policy approaches**

Rights- and entitlements-based approaches are concerned with the capacity of the state to acknowledge and guarantee citizens' rights in civil and political as well as in economic and social spheres. In practice, the implementation of international human rights agreements faces a number of constraints, especially fiscal ones. Recent efforts have focused on identifying key principles and sequences, and livelihoods approaches can help in identifying these (Conway et al., 2002; Moser et al., 2001). In the economic sphere, there are ethical and philosophical problems in defining the boundaries between the responsibility of the state and that of individual citizens. For instance, many would see responsibility for finding food and shelter to lie with individuals, but responsibility for creating conditions for successful engagement with the economy to lie with the state. The state would only provide food and shelter for those unable to engage in the productive economy, or in times of crisis (e.g. drought or famine). The areas of providing an institutional and infrastructural framework for individual economic activity, and meeting needs in exceptional circumstances are the main areas of overlap between rights approaches and the reduction of R&V discussed here.

The World Bank's SRM framework (World Bank, 2001) covers many of the issues discussed above, but is concerned primarily with providing a 'trampoline' to 'bounce' those likely to drop out of the productive economy back again quickly. It is less concerned with structural problems such as the exclusion of certain groups from certain markets (and the longer-term remedial action needed), or with questions of how to reach those unable to engage fully in economic activity<sup>21</sup>. There is also a need to identify ways to make the SRM framework operational (Farrington, 2004). Suggested guidelines for operationalising the SRM framework within an agricultural context are presented in Annex 1.

### **3.2 How well do targeted approaches work?**

As argued in section 2, reducing R&V in the productive sectors such as agriculture will require the mainstreaming of some measures and the targeting of others to specific groups or areas. De Haan et al. (1998) offer a framework for assessing the effectiveness of targeted approaches in four types of anti-poverty interventions – social funds, food and nutrition, microfinance and workfare<sup>22</sup> – and are cautiously optimistic about the prospects of targeting efforts to reduce poverty.

In contrast, other experience suggests a need for caution. For instance, targeting vulnerable groups and areas has long been a feature of agricultural and rural development policy in India. There are currently some 180 targeted programmes supported by central government (Saxena and Farrington, 2003). These include soil and water conservation, drought-prone area

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<sup>21</sup> In fact, there is a dearth of external agency interest in piloting more effective ways of making transfers such as pensions and allowances (Farrington, 2004).

<sup>22</sup> A form of welfare in which capable adults are required to perform work, often in public-service jobs, as a condition of receiving aid.

development and the provision of housing and social pensions. Guidelines governing the implementation of many targeted programmes are complex, and require interpretation by local government officers or elected representatives. They can also lead to widespread problems of rent-seeking<sup>23</sup>. This prompted the government of India (in mid 2004) to propose a 'lumping together' of all rural development programmes into a single fund, which would be allocated to districts on the basis of locally formulated plans and priorities. However, this proposal opens itself to possible abuse by district-level elites and bypasses state governments' mandates in many spheres of rural development (The Hindu, 30 June 2004).

There is no general answer to this conundrum: both targeting and mainstreaming lend themselves to incorporation into major poverty reduction instruments such as PRSPs and MTEFs. What is certain is that targeting to some degree will continue to be necessary, especially for those excluded from, or chronically unable to, engage in markets and for weakly integrated areas. In addition, any targeting must be via mechanisms proven to be robust in the face of chronic implementation constraints (Nayak et al., 2002; Farrington et al., 2003).

### **3.3 Trajectories from destitution to engagement**

The dominant paradigms on livelihood protection and promotion (such as the World Bank's SRM framework) focus on preventing the poor from 'dropping out' of the productive economy and, when they do, helping them to bounce back. These paradigms tend to disregard the possibility of bringing those largely outside the productive economy into it, along a kind of trajectory from a situation in which they rely mainly on social protection to one in which they benefit mostly from livelihood promotion. One such effort is the work done by the Bangladesh Rural Advancement Committee (BRAC) in its Income Generation for Vulnerable Group Development (IGVGD) programme (Matin and Hulme, 2003).

The Committee has faced a number of field-level implementation constraints in its IGVGD programme. To keep costs down, it is obviously desirable for community development workers (who would normally handle social protection) to cover interaction with the poor over both livelihood protection and promotion issues. However, they may lack the skills or inclination to become advisers in micro-enterprise or agriculture. The same applies to agricultural advisers – they may be a poor second-best when it comes to providing assessments and advice in relation to social protection. If this applies to the well-motivated staff of a dynamic NGO, it is likely to apply even more to public sector staff in social welfare or agricultural departments.

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<sup>23</sup> Rent seeking takes place when an entity seeks to extract uncompensated value from others by manipulation of the economic environment - often including regulations or other government decisions. It represents a detrimental transaction, whereas 'profit seeking' is regarded as a mutually beneficial transaction, although in practice the two become blurred and open to interpretation.

There are also more fundamental issues of social exclusion: certain types of productive activity are denied (or made available on adverse terms) to women and to members of specific castes, clans, classes and creeds. This kind of rigidity cannot be overcome by the conventional 'facilitation and regulation' efforts to make markets work for the poor; it requires specific and long-term targeted measures.

### **3.4 Do trade-offs exist and how can they be addressed?**

Not all possibilities will be 'win-win' in the way suggested by the SRM framework. As we have described, in a productive sector such as agriculture, policy decisions supporting high levels of growth may generate high levels of risk, and some growth may have to be sacrificed in order to reduce R&V.

Johnstone (2004) has argued that: '...the cost-benefit analysis [of different approaches to R&V reduction] ...clearly depends on:

- a) the level of taxation and the extent to which this undermines private sector investment
- b) the weight given to the welfare of the poor – lower overall growth may be a price worth paying for higher pro-poor growth if there is a trade-off
- c) how tax receipts are spent, for example, if on policies that sustainably increase the productive capacity of the economy/reduce risk and vulnerability, overall growth as well as pro-poor growth may be promoted'.

Similarly, choices exist regarding the types of R&V-reducing measures that will achieve similar goals within agriculture. For instance, where both are technically feasible, gravity-fed irrigation may be a more equitable protection against drought than individual pumps, but may require more public investment. In the same way, R&V-reducing measures initiated outside the agriculture sector can have very different effects on agriculture. Although food transfers tend to be politically popular (free school meals encourage attendance and special nutrition is essential for HIV/AIDS sufferers), they are costly to administer and may suppress demand in local food markets. In contrast, cash transfers or vouchers allow even the near destitute to engage in the economy as *consumers*, and may boost demand for agricultural products in local markets. However, these need stringent transfer mechanisms if they are to reach their intended beneficiaries – an area in which computerisation could help by facilitating automated payments.

There is no 'right balance' between social protection and agricultural growth, nor among the instruments available to promote one or the other. Much will depend on local circumstances. However, there is substantial unexploited scope for introducing the perspectives of the one into the design and implementation of the other; i.e. for giving aspects of social protection more

of a growth-promoting dimension, and for designing agricultural initiatives in ways that also aim to reduce R&V.

### **3.5 Addressing location-specific conditions**

Factors of R&V, in both productive and domestic spheres, will clearly vary according to a wide range of conditions. It is not possible to consider the full range of these here, but a few illustrations can be given.

Agro-ecological conditions will influence the 'riskiness' of production, as will the extent to which infrastructure (such as irrigation) has been constructed to counteract these. Market-related risks will impact differently according to: a) the types of crops grown in different areas, b) the extent and quality of links with international markets, c) international market conditions for such commodities and d) the extent of major consumer market penetration in a given country. Labour markets may be characterised by: a) different levels of casualisation, b) different types and levels of migration, c) different pressures on wages coming from rural non-farm or urban labour markets and d) different types and degrees of segmentation.

Factors of this kind will determine the types of R&V-reducing measures needed (such as employment creation schemes) and who should provide them. Location will determine the likelihood of events such as flooding, which will impact on both productive and domestic spheres. Differences in social network will determine the extent to which informal protection mechanisms can be called upon during times of crisis.

### **3.6 Prioritising and funding R&V reduction**

One of the most pressing operational questions, on which there is, as yet, no agreement, is that of the criteria that should be used to set priorities and sequences for R&V-reducing interventions. Evidence presented here suggests at least three sets of criteria, based on: a) type of risk, b) sub-group of the poor and c) geographical area.

Government departments are conventionally sector-based and are thus inclined towards an approach based on the type of risk. But this has to be qualified by some knowledge of which groups are more or less vulnerable to particular kinds of risk. This is because the relatively better off should be able to pay for at least some of the relevant risk-reducing approaches, such as crop, asset or personal insurance. Even the conventional assumption that the state will have to provide all R&V-reducing measures free of charge to poorer groups needs to be challenged. Recent evidence suggests that women's groups in a drought-prone part of Andhra Pradesh, India, were planning to use part of their savings to buy insurance for members rather than spend it on conventional (and generally over-subscribed) income-generating activities (Brizzi, personal communication).

An alternative, and potentially more coherent, approach would be one based on geographical area. Examining the characteristics of areas weakly integrated into market-oriented infrastructure and institutions allows identification of interventions that can provide appropriate combinations of R&V reduction and agricultural growth, within and beyond the mandate of agricultural departments. These could be focused, where necessary, on particular groups of the population and payment mechanisms identified where practical. The difficulty here would be to ensure that linkages between the area identified and other parts of the country (or other countries) are not neglected.

Traditional R&V reduction through informal mechanisms between rural people should not be neglected. Transfers within the extended family still constitute the major means of support for those unable to engage fully in the productive economy. Farmers' (and labourers') own strategies of diversification, reliance on risk-avoiding crops and combinations of farm enterprises etc. remain some of the main R&V-reduction strategies in the agricultural sector. Some argue that replacing these with formal mechanisms may release resources for productive investment (Devereux, 2003), but rural people will inevitably be suspicious of the sustainability (or not) of formal mechanisms, and this is an area in which public sector reputations will have to be established.

## 4. Conclusions

This paper argues that initiatives to reduce R&V, if managed well, can enhance the engagement of the poor in markets, and so stimulate productive activity. Also, certain types of public investment (e.g. in infrastructure) can stimulate private investment as well as reducing risk. A central question is how policies in agriculture and related sectors can mainstream R&V-reducing measures in ways that are compatible with the kinds of options already available to the rural poor. The available evidence suggests strong prospects for mainstreaming but also indicates that some of the measures would have to be 'targeted' towards particular groups or geographical areas, especially to address structural problems of exclusion from markets, market segmentation and interlocking. One near-universal finding is that affirmative action is likely to be needed to prevent pervasive discrimination by gender, race, caste, class or creed.

R&V-reducing measures are frequently absent from public policy in agriculture and by higher-level policy, despite available options. R&V-reducing measures could also be taken in other sectors, which would complement agriculture-based measures.

The analysis suggests a number of specific *knowledge gaps* in relation to R&V reduction in agriculture. For instance, in addition to "areas of remaining debate" outlined above, we know little about:

- how the links between social protection, agriculture and gender are played out in relation to women's practical and strategic interests;

- how the private sector might best be supported in designing and marketing appropriate new R&V-reducing products, including microsavings, credit and insurances; and
- the nature of individuals' trajectories (if any) from being outside to being within the productive economy, what the preconditions for such progression are, and whether/how they might best be put in place.

However, the general conclusion is that efforts to reduce the effects of R&V will rely at least as much on improving the implementation of existing ideas and practices as on filling knowledge gaps. In this respect, the paper offers a number of policy suggestions for further debate and, eventually, for incorporation into action agendas:

- The priority is to 'mainstream' R&V-reducing measures within policies focusing on agriculture and related spheres. Experiments in reducing R&V need to be shared within and across countries and innovative practices should be promoted.
- Some countries need to strengthen the implementation of their existing policy measures.
- Both new and existing measures need to be inserted into 'new architecture of aid' vehicles such as PRSPs, MTEFs and direct budgetary support, where there is currently very little or no discussion of R&V reduction within the mandates of the productive sectors.
- There is a need to strengthen national capacity to assess and evaluate trade-offs between measures that promote growth and those that reduce R&V, and between the different instruments for achieving R&V reduction, both within and across sectoral mandates.

The paper focuses on R&V in relation to agriculture, and does not address wider vulnerability issues faced by those unable to engage fully with the productive sector, or low-income households and individuals working as small farmers or labourers. To some degree, vulnerability will be reduced as assets are retained, created or strengthened in the face of shocks and stresses, and this progression will mostly depend on higher and more stable levels of income and expenditure. Availability of personal and property insurance will help towards this end, as will measures to promote savings, make credit more easily accessible and, perhaps most important of all, means to promote livelihood diversification away from traditional low-income farm and non-farm activities.

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**Table 1: Taking R&V more fully into account: what difference would it make to agricultural sector policies and approaches?\***

	<i>Conventional agricultural policies</i>	<i>R&amp;V-sensitive agricultural policies</i>
<b>Objective:</b>	To 'go for growth'	To capture some growth but at the same time to reduce variance around rising productivity trends, trading off some growth to reduce risk; to promote types of agriculture that explicitly involve job-creation
<b>Underlying philosophy:</b>	<ol style="list-style-type: none"> <li>1. Regards all producers and labourers as fully autonomous economic actors capable of engaging freely with the market</li> <li>2. Almost exclusive reliance on market mechanisms to reduce poverty</li> </ol>	<ol style="list-style-type: none"> <li>1. Recognises that some people and areas are excluded from markets; seeks to understand how R&amp;V reduction can help them to engage more fully</li> <li>2. Moderates market mechanisms and institutions via public investment, publicly-mandated service delivery and regulation to ensure that the poor engage, and that they are not disadvantaged. Sees the need for measures specifically targeted towards sub-categories of the poor</li> </ol>
<b>Modalities:</b>	<ol style="list-style-type: none"> <li>1. Relies on ability to pay and formalised pressure from producers as means of making public services responsive</li> <li>2. Cross-sectoral collaboration driven by growth perspectives and mainly with infrastructure, banking etc.</li> </ol>	<ol style="list-style-type: none"> <li>1. Recognises that participatory and empowering approaches will be needed to elicit the requirements of the disadvantaged and to get public services to respond to their needs</li> <li>2. Cross-sectoral collaboration driven by e.g. the need to make R&amp;V reduction coherent across productive and domestic spheres</li> </ol>

\*Agricultural policy here is assumed to be driven by some combination of agricultural growth promotion and poverty reduction. **Food sovereignty** is a different, very specific objective, which seeks food self-sufficiency especially in those areas weakly integrated into even local markets. This would require a different set of risk-reduction objectives, with a greater emphasis on e.g. agro-ecological approaches to reduce the risk of environmental degradation, and less emphasis on supporting farm workers in low-potential areas to pursue alternatives via the labour market.

**Table 2: Sources and forms of shocks and stresses, by scale**

	<b>Micro (idiosyncratic)</b>	<b>Meso</b>	<b>Macro (covariant)</b>
<b>Natural</b>	Pests and diseases	Rainfall Landslide Volcanic eruption	Earthquake Flood Drought Strong winds
<b>Health</b>	Illness Injury Disability	Epidemic	
<b>Life-cycle</b>	Birth Marriage Old-age Death		
<b>Social</b>	Crime Domestic violence	Terrorism Gangs	Civil strife War
<b>Economic</b>	Unemployment Harvest failure Ethnic discrimination		Output collapse
	Business failure	Riots	BoP, financial or currency collapse Technology or ToT shocks
		Resettlement	
<b>Political</b>			Potential default on social programmes
<b>Environmental</b>		Pollution Deforestation Nuclear disaster	

*Source:* adapted from Holzmann and Jorgensen (2000)

**Table 3: Major types of agriculture-related risk typically faced by the rural poor, and illustrations of risk-reducing response**

Types of risk typically faced	Typical measures to prevent/mitigate/cope with risk				Types of farmer or labourer typically affected
	(A) Traditional	(B) Formal: within agriculture	(C) Formal: at higher level (vertical)	(D) Formal: in related departments (horizontal)	
<p><b>1. Risks related to market performance:</b></p> <p>a) input/output price fluctuations, possibly associated with international market changes; stricter quality controls on products; saturation of national markets; transport/storage failures for perishables</p> <p>b) high transaction costs for those already operating within markets</p>	Few available, other than cooperative-like institutions and resource-sharing mechanisms	<p>Diversification, achievement of higher quality and value-addition through improved technology, education, information, extension advice and other service delivery; price fluctuations reduced through storage infrastructure, buffer stocks and forward market 'hedging' (although likely to remain problematic)</p> <p>Wider introduction of insurance against loss of crops and farm assets</p> <p>Transaction costs addressed through better enabling and regulatory environments</p>	Renegotiation of tariff and non-tariff barriers through international trade policy; negotiation of FDI and IPR provisions; fiscal and monetary policies to stimulate export orientation, diversification etc.	<p>High transaction costs addressed through improved transport and communications; better definition and enforcement of contract law; strengthening of law and order more generally</p> <p>Wider introduction of personal insurance (life, health, injury) and insurance on non-agricultural assets</p>	Commercial or semi-commercial farmers
<p><b>2. Risks related to accessing product, input and land markets:</b></p> <p>a) high transaction costs of getting into markets</p>	Group formation to establish countervailing power, to acquire information, skills	<p>Strengthening skills and diversification as in 1(B)</p> <p>Capacity building for small-scale farmers to organise (possibly</p>	National policy on spatial and substantive focus of investments can lead to risk-spreading. National	As in 1(D), plus: Support to those unable to access agricultural markets to diversify into non-	Smaller scale farmers and labourers in more remote areas, often of lower

<p>b) exclusion of small-scale farmers through concentrations of power among elites, lack of assets/skills, and on social grounds, including gender (market segmentation)</p> <p>c) weak regulation of input quality</p> <p>d) risk of eviction by landlords</p> <p>e) loss of common access by the poor</p>	<p>etc.; to share facilities (e.g. storage and transport)</p> <p>Group formation to negotiate (normally contested) access to resources, such as among pastoralists</p> <p>Innovative 'chaperoning' to allow women to work in marketplaces</p>	<p>unionise)</p> <p>Design and implementation of land-related legislation to prevent unfair treatment of tenants, and to protect access by the poor to common pool resources</p> <p>Land redistribution to the poor where it remains feasible</p> <p>Introduction of modified area-based approaches where appropriate</p> <p>Research into biopesticides and soil ameliorants – less subject to market price fluctuations</p>	<p>affirmative action on skills building and empowerment for disadvantaged groups</p> <p>Design and enforcement of national legislation on discrimination</p> <p>Ditto for legislation against accumulation and abuse of market power</p> <p>Subscribe to and implement international conventions on gender</p>	<p>agriculture options including rural non-farm economy and urban unskilled/semi-skilled work</p> <p>Strengthening of rural business services</p>	<p>social status with limited skills and social networks</p>
<p><b>3. Risks relating to labour markets:</b></p> <p>a) Downswing in labour demand owing to any of above</p> <p>b) Decline in demand for unskilled labour as product standards rise</p> <p>c) Limits on choice owing to informal social protection sought via patrons (interlocked markets)</p>	<p>Traditional labour exchange</p> <p>Formation of migrant labour gangs</p> <p>Informal social protection within household/community</p>	<p>Support to diversification as in 1(B) and 4(B)</p> <p>Support to agriculture-related skills enhancement</p>	<p>As in 1(C), plus:</p> <p>Subscribe to and implement international conventions on gender and employment rights and conditions</p> <p>Skills policies as in 2(C)</p> <p>National policies on microsavings and personal/asset</p>	<p>As in 2(D), but with particular attention to improving labour conditions, including support to seasonal migration via better communications, transport, education of children, workers' hostels, remittance mechanisms etc.</p> <p>Skills enhancement on non-agricultural work;</p>	<p>Those having a little land, but mainly dependent on sharecropping, seasonal migration etc.</p>

<p>d) risks of casualisation as arrangements in 3(c) are abandoned  e) breach of contract  f) dangerous working conditions</p>			<p>insurance to help in breaking exploitative patron-client relations  National policies on income transfers during hardship, plus routine transfers (e.g. via pensions) to protect the elderly and vulnerable</p>	<p>public works programmes for 'food/cash for work'  Microfinance to provide the rural poor with alternatives to 'interlocked' arrangements with patrons</p>	
<p><b>4. Environment-related 'generic' risks:</b>  a) pests and diseases  b) weather  c) environmental change</p>	<p>Collective action for soil and water conservation; choice of crops, varieties, cropping mixes and sequences, traditional pest management materials and techniques; diversification and investment in 'bite-size' assets (trees, small livestock) that can be sold in a crisis  Measures tailored to seasonal stresses such as the planting of flood-resistant trees in low-lying parts of Bangladesh</p>	<p>Support to diversification and skills enhancement as in 1(B) – 3(B)  Publicly-funded research to 'rediscover' and reinforce farmer strategies and counterbalance the private research push towards high-risk, high-yield strategies  New weather-focused crop insurance strategies to be tested more widely and scaled up  Investment in communal assets such as irrigation; support for private asset creation  Transfers/promotions such as Starter Packs</p>	<p>National and international efforts to predict major climatic events such as El Niño and introduce risk-reducing measures such as different crop varieties  International efforts to predict and reduce global warming  Risk-reducing role of international conventions on sharing of river waters, environmental use of forests, biodiversity conservation etc.</p>	<p>Little role likely other than support to alternative sources of income via diversification etc. as in 1(D) – 3(D)</p>	<p>Those mainly active as small-scale farmers on own land, but may also lease in or sharecrop and migrate seasonally</p>



**Table 4: Examples of social risk management**

<b>Arrangements/ strategies</b>	<b>Informal/personal</b>	<b>Formal/financial market-based</b>	<b>Formal/publicly- mandated/ provided</b>
<b>Risk reduction</b>	Less risky production Migration		Labour standards (VET) Labour market policies Disability policies
<b>Risk mitigation</b>	Disaster preparedness and mitigation		
<b>Portfolio</b>	Multiple jobs Investment in human, physical and real assets	Investments in multiple financial assets	Multi-pillar pension systems Social funds
<b>Insurance</b>	Marriage/family /community arrangements Share tenancy Tied labour	Old-age annuities Disability/accident	Mandated/provided for employment, old- age, disability, survivorship, sickness, etc.
<b>Hedging</b>	Extended family Some labour contracts		
<b>Risk coping</b>	Selling of physical and real assets Borrowing from neighbours Intra-community transfers/charity Sending children to work	Selling of financial assets Borrowing from banks	Transfers/social assistance Subsidies Public works

*Source:* adapted from Holzmann and Jorgensen (2000)