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Non-farm wages and poverty alleviation in developing countries

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Rural Non-firm Wages and Poverty Alleviation in Sub-Saharan Africa

Abstract

This paper is about rural non-farm income and poverty alleviation in sub-Saharan Africa and the determinants of differentials access to rural non-farm incomes, with an overview of trends in the magnitude, and location of rural poverty. It also offers evidence that advances our understanding of rural poverty, by presenting quantitative analysis of the determinants of rural income from farm and non-farm sources, drawing on data from Rural Income Generating Activities data base of 15 countries, complemented by demographic, health, production and income data from other sources. In order to reduce rural poverty, policies should concentrate both on improving household activities already available, most prominently farming and on expanding the range of potential activities of family members. The lessons from experience and much of the rural development literature is that the income generating potential, the ability to access and take advantage of activities, depending on access to fixed assets.

Key Words: Rural non-farm income, poverty alleviation, assets, livelihoods, policy makers, rural income generating activities, Quantitative analysis, rural poverty, rural development literature.

1. Introduction

This publication is about rural non-farm (RNF) activity in sub Saharan Africa and the determinants of differentials access to RNF incomes. There is growing interest in RNF income as research on rural economies is increasingly showing that rural people's livelihoods are derived from diverse sources and are not as overwhelmingly dependent on agriculture as previously assumed. Moreover policy-makers are turning their attention to the wider rural economy, as they seek ways to reduce persistent rural poverty. The determinants of access to RNF activities, or capacity to engage in RNF activities are discussed. The policies that help to create RNF opportunities are not tackled here and in the 'growth with equity' equation the focus is on the equity factors.

This paper is intended to contribute to increased focus on poverty in development by informing and simulating debate, policy and action amongst key players in the development process.

This paper is divided into four main sections that provide:

- (i) background, definitions, concepts and characteristics of RNF activities
- (ii) an overview of the role of RNF incomes in poverty alleviation in Africa;
- (iii) evidence on the factors that determine capacity to engage in RNF activities,

(iv) conclusions and policy implications

The literature on income diversification is thwarted with definitional problems and inconsistencies. Here 'non-farm' refers to those activities that are not primary agricultural, forestry or fisheries. However non-farm includes trade or processing of agricultural products (even if, in the case of micro-processing activities, they take place on the farm). Barrett and Readon (2001) stress that this definition is sectoral, i.e. it follows the convention used in national accounting systems where a distinction is made between primary production, secondary (manufacturing) activities and tertiary (service) activities. It does not matter where the activity takes place, at what scale, or with what technology.

The term 'non-farm' should not be confused with 'off-farm'. The latter generally refers to activities undertaken away from the household's own farm and some authors (e.g. Ellis 1998) use it to refer exclusively to agricultural labouring on someone else's land so 'off-farm' used in this sense does not fall within the normal definition of 'non-farm'.

The term 'rural' is subject to a similar amount of debate, hinging on three particular aspects: whether small towns are rural or urban; at what size does a rural settlement become urban, and the treatment of migration and commuting between rural areas and towns. There is no firm rule that resolves this issue, and the only practical solution is for researchers to make sure that the definition they have adopted is clearly stated.

Finally, there is the unit of analysis. This text refers to 'activities' to emphasize the focus on income generated by an individual's or household's activities, as opposed to remittance income. Reference is also made to livelihoods, with a stronger hint of the process that underpins the way rural people derive their incomes. (A livelihood comprises the activities, the assets and the access that jointly determine the living gained by individual or a household", 1999); 1). RNF income is a useful way in which to categorize income, but care must be taken not to understate earnings or productions in kind. Similarly, for some, 'employment' has connotations of formal employment, or employment by others, thereby downplaying the role of self-employment.

The literature sometimes refers to the RNF 'sector' but this might imply a degree of homogeneity that belies the multifarious nature of the activities that comprise that 'sector'. References to the RNF 'economy' is finding increasing currency (e.g. Lanjouw and Feder, 2000; Marsland et al, 2000). However there is a potential semantic problem where it is used to describe 'non-farm' as defined above, whilst the word 'economy' usually includes the linkages that this definition specifically excludes (i.e. many people would include as part of the farm economy aspects of agricultural trade and processing that are defined here as being part of the non-farm economy).

However words such as income, employment, sector and economy cannot be avoided. In this paper, where they are used, income should be understood to include income received in cash or in kind, whether generated through wage labour or self-employment, employment includes self-employment unless otherwise stated or implied by the context, reference to the RNF sector is not meant to imply an enormous degree of homogeneity, and mention of the RNF economy adheres to the non-farm definition described above.

Rural non-farm activities and their relative importance within rural economies:

In many years, agriculture alone cannot provide sufficient livelihood opportunities. Migration is not an option for everyone and, where possible, policy-makers may in any case prefer to limit the

worst excesses of urbanization with its associated social and environmental problems. Rural non-farm employment can play a potentially significant role in reducing rural poverty. Numerous studies indicate the importance of non-farm enterprise to rural incomes. Reardon (1997) documents small enterprise studies that show that the typical rural household in Africa has more than one member employed in a non-farm enterprise. Islam 1997 reports that the share of the non-farm sector in rural employment in developing countries varies from 20% to 50%. Reardon (1997) finds RNF income shares in Africa ranging from 22% to 93% , and Canagarajah (1999) point to a large body of recent research that indicates that the RNF sector is now thought to be more dynamic and important than previously believed.

In Africa, the average share of RNF incomes as a proportion of total rural incomes, at 42%, is higher than in Latin America and higher still than in Asia (Reardon et al., 1998). Most evidence shows that RNF activity in Africa is fairly evenly divided across commerce, manufacturing and services, linked directly or indirectly to local agriculture or small towns, and is largely informal rather than formal (Reardon,1997).Haggblade et al.1997) found services, commerce and restaurants to be the fastest-growing non-farm sectors. Households earn much more from RNF activity than from farm wage labour, but (where the available data permit this comparison) non-farm wage labour is more important than self-employment in the non-farm sector (Reardon,1997).

Livelihood diversification is often characterized as being driven by two processes: distress-push, where, the poor are driven to seek non-farm employment for want of adequate on farm-opportunities; and demand-pull, where rural people are able to respond to new opportunities. In the former situations, large numbers may be drawn into poorly remunerated low entry barrier activities, whilst the later are more likely to offer a route to improved livelihoods. This two-way categorization is undoubtedly an oversimplification, but it is a useful reminder that participation in RNF activities may derive from quite different circumstances and have quite different outcomes.

Moreover , some of the evidence on income distribution, discussed in section 2, lend support to the view of two qualitatively different categories of RNF employment. It is important however, that policy analyst do not neglect the low return activities.(Lanjouw and Feder (2000;17) point out that “Such employment may nevertheless be very important from a welfare perspective for the following reasons off- farm employment income may serve to reduce aggregate inequality; where there exists seasonal or long term employment in agriculture, household may benefit from low non-farm earnings; and for certain sub groups of the populations that are unable to participate in the agricultural labour market, non- farm incomes offer some means to economic and social security”

Discussions by rural poor households concerning involvement in RNF activities depend on two main factors, i.e incentives offered and household capacity (Reardon et al.1998).The latter is the focus of this research paper , which aims to provide more information on access to constraints faced by the rural poor seeking to work in RNF economy. Some of the constraints identified may be equally applicable to participation in wage labour in the farm sector. Many factors are at play, and the particular activities that result are rarely attributable to a single factor.

2.Rural non-farm activities and poverty alleviation in Africa:

Powerful role in poverty alleviation.

In many parts of the world, the number of poor people in rural areas exceeds the capacity of

agriculture to provide sustainable livelihoods. Even with a decline in fertility rates and a slowing of population growth, this situation will not change significantly. Whilst there is a potential for out-migration, urban centers cannot be assumed to be capable of providing adequate livelihood opportunities for all those unable to make a living in agriculture (Marsland et al, 2000).

This indicates a potential role to RNF activities in reducing poverty in rural areas in Africa. Rural-non-farm activities may:

- (i) absorb surplus labour in rural areas ;
- (ii) help farm-based households spread risks ;
- (iii) offer more remunerative activities to supplement or replace agricultural income ;
- (iv) offer income potentials during the agricultural off- season;
- (v) provide a means to cope or survive when farming fails.

Rural non-farm opportunities can have an indirect effect on wages among the rural poor and also ‘‘expansion of non-agricultural employment opportunities is likely to tighten casual labour markets in general and thus raise wages in the agricultural labour markets (Lanjouvw,1999):4). A further indirect effect occurs where RNF income enables poor households to overcome credit and risk constraints on agricultural innovations (Ellis, 1998 citing work by Taylor and Wyatt, 1996).

3.Evidence on rural non-farm incomes and poverty impacts:

The evidence on poverty impacts is less promising than the vision. Drawing on data from 33 field studies in Africa, Reardon (1997: 1) states ‘‘The most worrying finding was the poor distribution of non-agricultural earnings in rural areas in Africa, despite the importance of these earnings to food security and farm investments. This poor distribution implies significant entry barriers and market segmentation; it is probable that it will lead over time to skewed distribution of land and other assets in rural Africa’’.

The short-term effects of RNF income on farm household food security are reasonable clear. Non-agricultural-income provides the cash that enables a farm household to purchase food during a drought or after a harvest shortfall. Non-agricultural income is also a source of agricultural household savings, used for food purchase in hard times. On the long term effect on food security, however, there is relatively little empirical evidence (Barrett and Reardon).

There has been much more study of rural nonagricultural activity’s effects on income inequality. Growth in the RNF sector may reduce income inequality if income from such activities disproportionately favors the poor. This is the conventional wisdom that underpins many rural enterprise programs, which are motivated by the assumption that RNF income can compensate for the inadequate farm incomes of the poorest. However, income distribution may worsen if the better-off benefit from RNF activities to a greater extent than the poor.

The evidence on the relationship between the share of non-farm income in total household income and the level of total income (and or size of land holdings as a proxy indicator of wealth) is very mixed. Reardon’s (1997) review found a strong and positive relationship in 18 field studies in Africa, indicating that RNF income was more important to the higher income households.

However, there were also examples where the opposite was true (e.g. central Kenya) or where there was a U-shaped relationship, indicating comparable importance of RNF income in total income to both the poorest and the least poor rural households (e.g North Nigeria). When incomes rather (rather than income shares) from RNF activity are compared across income groups, the difference are more pronounced, reflecting the low wages typically received by low income household engaging in RNF activity. Barrett and Reardon (2001) argue that as this relationship is less common in other low and middle income countries, there must be particular impediments to the participation of the rural poor in RNF activity in Africa.

A study by Adams and He (1995) is particularly interesting on this point –though unfortunately the evidence comes from Pakistan, not Africa. They found that non-farm income as whole reduced income inequality, but when it was disaggregated into unskilled labour, self-employment and government, only the first category decreased income inequality. Both self-employment and government employment had high entry costs that effectively excluded the rural poor.

Where RNF activities seem to exacerbate income inequality, as observed in much of Africa, Reardon et al.(1998:322) note that there is scarcity of labour- intensive activities that have low entry barriers. This is so in both non-farm and farm sectors that are characterized by an underdeveloped farm labour market and predominantly traditional production technologies using family inputs. Additional factors include a relatively equal land distribution (and a virtual absence of landless households), a low population and infrastructure density, a relatively low level of rural town development and significant entry barriers for investment in capital- intensive subsectors.

Nonetheless, there are many ways in which RNF activities are important to the poor in Africa. Cottage industry enables women to combine income generating activities with other tasks, such as food preparation and child care (Lanjouw and Lanjouw, 1997; Gordon et al 2000a). Examples in sub-Saharan Africa include beer brewing, fish processing, edible oil processing, crochet, pottery, rice husking, groundnut shelling, preparation and sale of prepared foods, and other small trading activities that can be carried from the home or nearby.

Participation in the RNF sector allows poor people to smooth out or offset fluctuations in agricultural income that might occur on a seasonal basis or as a result of un expected events. This is especially the case where savings, credit and insurance mechanisms are not available for this purpose, as is the case in many rural areas in Africa.

Where the agricultural sector in Africa is dominant, non-farm income opportunities are likely to echo trends and shocks in agriculture, but may none the less be somewhat more stable. Reardon et al. (1992) studied in one of the African countries (Burkina Faso) and found that total income was considerably more stable than cropping income alone.

There are numerous studies an indirect effect of RNF income in Africa showing how it permits investments in agriculture (e.g.Tifeen and Mortimore, 1992; Reardon et al ; 1998).

Where the rural poor are landless, non-farm income can be particularly important, (1998:9-10) a greater reliance on non-farm income in Asia (around 60%) as compared with sub-Saharan Africa (where 30-50% reliance is commonplace). ‘‘This difference is consistent with other evidence suggesting that the roots of rural poverty differ between Asia and Africa. Whereas in Asia, a prevalent feature of rural poverty is near or actual landlessness so that poor household must rely on off-farm and non farm income sources for survival; in Africa the main factors contributing to rural poverty are locational and reflect not so much lack of access to land, but location-specific lack of

access to an array of services and opportunities (roads, school, market services, input supplies, power, non-farm activities) as well as environmental constraints.

3. Rural non-farm agricultural activities important to the poor

Reardon et al (1998) argue that there are three distinct stages of RNF sector transformation:

(i) during the first stage, RNF activity tends to be closely linked to agriculture, with agriculture still employing a large share of the population, and RNF activity taking place in the country side itself rather than in rural towns

(ii) the second stage is characterized by a greater mix of situations, rural-urban linkages becoming stronger, some tendency towards commuting , and some rapid growth in agro-industrialization but forming nonetheless, still encompassing all scales of activity.

(iii) The third stage involves an increasing tendency towards the trends seen in the second stage, gives much greater emphasis on rural-urban linkages, substantial employment in sectors completely unrelated to agriculture, and rapid agro-industrialization in commercial agriculture.

Sub-Saharan Africa and South Asia are purportedly in the first stage, whilst Latin America is a second stage example, and East Asia has reached the third stage.

This has implications for the type of RNF activity present Reardon et al.(1998) argue that the first stage of rural economies are characterized by RNF activities that are closely linked to agriculture, either in terms of input supply and services, or crop processing and distribution. This being the case, a dynamic agricultural sector will tend to be associated with relatively more RNF activity and vice versa.

Islam (1997) argues that the poor tend to engage in low paid employment, often as rural wage labourers or are self-employed at home. Reardon et al (1998) agree in part although emphasizing the importance of labour intensive wage employment more than self-employment.

Poorer household are less able to tolerate negative shocks to their income, and are, therefore, likely to diversify into less risky activities. Better-off households, on the other hand, are often engaged in industry, commerce and trade as entrepreneurs and employers, occupations from which they have the possibility of earning higher incomes than those available to poor people. Reardon (1997) states that own cash sources are an important determinant of households capacity to start non-farm businesses or to obtain off-farm employment . Therefore upper income strata households have a much higher shares of non-farm income as a proportion of total income, and have higher absolute non-farm earnings.

Bryceson (1999) also comments on the growing divide between those with and without sufficient financial capital to enter non-agricultural activities with high returns to labour. Low asset households can spend a large share of their time in non-farm employment but the wage they receive is low.

Smith et al's (2001) research on rural households in Uganda finds similar patterns. A disaggregation of livelihood activities in these two districts by wealth and gender revealed that the greatest diversity could be found amongst the poorer strata. Next to own farm activity, the

poorer men in Rakai (a developing area) engaged in several activities (including carpentry, fish marketing and laboring), whilst the women were predominantly engaged in labouring, the production and sale of handicrafts and trading farm products .

This contrasts to Kumi where wage labouring on other farms was classified as the key activity (after own farm work) of poorer men and women. In addition, brick making for men and the production and sale of alcoholic beverages for women were also important livelihood activities.

There was significantly less diversification and greater symmetry across districts among the better-off , who were typically engaged in livestock rearing (in both districts) and agricultural commodity trading (in Rakai district) whilst current labouring patterns (among poorer men of the rural areas) in Kumi have historical precedence, traditionally used by the poor as a source of income for food in times of drought, the loss of cattle and oxen has forced a much larger proportion of the rural population into this lower entry barrier activity. Remaining assets, particularly cattle and productive land, have been sold or rented to meet short-term survival needs, and many households has been pushed out of higher entry barrier activities, into these lower entry barrier lower income activities. For those engaged in higher entry barrier activities such as trading (in both districts), be it livestock or coffee, there appears to be a self-sustaining cycle of knowledge ,social networks and income potential .The better-off buy from other local producers transport to bigger markets and re-sell. They exploit their superior knowledge of non-local markets their ability to assess risks and their pre-existing solvency.

Reardon et al. (2000) raise concerns about the evidence of significant entry barriers faced by the poor in engaging in non-farm activity. They note that this trend may intensify because of the following:

- (i) growing markets in the off-farm food system are high value markets, whose entry requirements pose considerable entry barriers to the poor .
- (ii) the service sector is likely to become more sophisticated, in response to media exposure and rising incomes in rural towns;
- (iii) outsourcing will be increasingly determined by skills and co-ordination rather than low wages;
- (iv) as rural town grow, skilled wages in rural areas will rise;
- (v) these pressures will be reinforced by globalization and trade liberalization.

5.Characteristics of the rural non-farm economy of the rural poor and its determinants

This section explains the wealth differentiated ways of participation in rural non-agricultural activities. The livelihoods literature focuses on the influence of household or individual assets as determinants of poverty and livelihood outcomes. Five categories of asset are identified: human capital, social capital, physical capital ,natural capital and financial capital. These asset categories are used to structure the discussion bellow:

Many donors are changing their approach to rural poverty alleviation to one that emphasizes (Bryceson, 1999):

- (i) reducing vulnerability to increase resilience and improve livelihood sustainability

(ii) participatory methods,

(iii) holistic analysis focusing on multiple determinants of livelihood outcomes;

(iv) the role of a broader change of assets (natural, physical, financial, human and social) over the narrower, traditional focus on farmers' means of production (land, labour and capital).

The policies aim to improve the assets held by the poor and/or increase their productivity. Camey (1998) stresses the importance of factors that determine who gains access to assets, their productive value, and the uses to which they are put. "There is a need to understand the vulnerability context in which assets (the trends, shocks and local cultural practices which affect livelihood). Second, it is vital to understand the structures (organizations) and processes (policies, laws, rules, of the game and incentives) which define people's livelihood options."

The following explains the different type of assets. These categories provide an appropriate way in which to structure the evidence on livelihood choices and outcomes reviewed here.

Capital assets:

Natural capital: the natural resource stocks from which resource flows useful livelihoods are divided (e.g land, water, wildlife, biodiversity, environmental resources)

Social capital: the social resources (e.g networks membership of groups, relationships of trust, access to wider institutions of society) upon which people draw in pursuit of livelihoods.

Human capital: the skills, knowledge, ability to labour and good health important to the ability to pursue different livelihood strategies.

Physical capital: the basic infrastructure (e.g transport, shelter, water, energy, and Communications) and the production equipment and means which enable people to pursue their livelihoods.

Financial capital: the financial resources which are available to people (whether savings, supplies of credit or regular remittances of pensions) and which provide them with different livelihood options (Camey 1988, adapted from Scoones, 1998).

Education for the rural poor: The human capital of a household, as measured by schooling, is expected to generally be linked to a shift to non-agricultural activities since this is where the returns to education are most likely to be highest (Taylor and Yunez-Naude, 2000). This does not necessarily imply there are no returns to education in agriculture, but rather that, on average, increased education appears to likely lead to a shift away from agricultural activities. A lack of education creates a barrier to entry in many non-agricultural activities and education is expected to be particularly important in participation in non-agricultural activities.

A number of studies on rural non-agricultural wage employment support this conclusion for a range of countries including Gambia, Tanzania (Lanjouw, Quizon and Sparrow, 2001), Chile (Berdegue et al 2001), Ecuador (Elbers and Lanjouw, 2001), Brazil (Ferreira and Lanjouw, 2001), Mexico (Taylor and Yunez-Naude, 2000; Winters, Davies and Corral, 2002), Honduras (Isgut, 2004, Ruben and Van den Berg, 2001) and China (de Janvry, Sadoulet and Zhu, 2002).

Evidence of an effect of education on the frequency of rural non-agricultural self-employment is mixed: a few studies Tanzania (Lanjouw, Quizon and Sparrow, 2001), Chile (Berdegue et al, 2001), Ecuador (Elbers and Lanjouw, 2001), Mexico (Taylor and Yunez-Naude), 2009), China (de Janvry, Sadoulet and ZHU, 2005) --- show a positive relationship between education and participation in rural non-agricultural self-employment while others find no statistically significant evidence of influence.

Overall, education is hypothesized to be linked to a shift away from agricultural toward non-agricultural activities and to higher returns from these non-agricultural activities. The strength of these results is expected to increase as development occurs and the opportunities in the non-agricultural economy expand.

6. Infrastructure and urban proximity

Access to infrastructure and population centers is likely to increase opportunities in non-agricultural activities. Infrastructure such as electricity is a useful input for certain self-employment. Infrastructure such as electricity is a useful input for certain self-employment. In addition, proximity to markets provides opportunities to sell output and purchase inputs from self-employment, as well as opportunities for non-agricultural wage employment.

Of course, access to markets may also provide higher returns to agricultural activities through better input supply and greater opportunities for high value crops. On average whilst it is unlikely that those with infrastructure access and with proximity to urban centers will be more likely to participate in agricultural activities, those that do participate may obtain more money from those activities.

While, results on the importance of infrastructure and proximity vary across previous studies, possibly because of different definitions of infrastructure and market access, the expected pattern as repeatedly been found in the data. For example, in Brazil, Ferreira and Lanjouw (2001) find that being near an urban region increases the probability of participating in non-agricultural wage employment, while Elbers and Lanjouw (2001) in Ecuador find that households near larger urban areas and remote rural areas participate less in non-agricultural activities relative to those near urban centers. For Nicaragua, Corral and Reardon (2001) find that having access to electricity and improved road both increase the probability of being involved in rural non-agricultural wage employment and the amount of income earned from that activity. De Janvry, Sadoulet and Zhu (2005) find that proximity to the country's capital influences participation in rural non-farm activities in China. Winters, Davies and Coral find in Mexico those in proximity to urban centers are less likely to participate in agricultural wage activities while those in semi-urban environments are more likely to participate in non-agricultural wage employment.

Even with the differences in measures, the results points to a strong influence of access to infrastructure and proximity to urban areas, as well as a positive correlation between access and rural non-agricultural wage employment. Greater access to infrastructure is therefore hypothesized to be positively linked to non-agricultural activities and negatively related to participation in agricultural activities. As the non-agricultural activities expand with development, the expectations is that the effect will be even stronger.

4.Land [HERE HERE 4 comes after 6 ???]

Most rural household own land, possibly only small plots of land as seen in figure 23, which presents histograms of the different land ownership categories by country for each region.

Landlessness is most prevalent in Latin America and Asia reaching from 40 to 60% of household as can also be seen in table 21. The prevalence in Ghana is also high, those numbers masks collective forms of land access which are not captured in this variable. Landlessness is least prevalent in Vietnam, Malawi and Albania at around 10%. In some of these countries alternative forms of access to land, such as rentals and share cropping are common.

Not owning agricultural land does not necessarily represent a situation of disadvantage for rural households, as landlessness may signal either transition out of agriculture into higher return activities, or a household wanting to farm, but land constrained. Indeed, Table 21 shows that the share of rural household that own land tends to decrease with increasing levels of household wealth. This is true in all four of the Latin American countries, as well as Nigeria and Indonesia.

In the other three African countries land ownership is more or less constant across quantiles as is also the case, in Nepal, Vietnam and Albania. Only in Bangladesh, Pakistan and Bulgaria does the share of rural household owning agricultural land increase with expenditure quantile.

Furthermore, lack of ownership does not mean lack of access to agricultural land. In some countries and or traditional arrangements such as encroachment of public land or use of communal land, as well as formal arrangements such as land rentals and sharecropping agreements allow access to agricultural land to many households. This is reflected in Table 22 which shows household owned and operated land by expenditure quantiles. For example in Ghana the high jump in the operated land as compared to owned land illustrate how in this country informal land access and mechanisms are extremely important. Also operated land is better distributed than owned land, as shown by the simple inequality indicator of the ratio of holdings of the fifth to the first quantile which is lower for operated land for every country except for Bulgaria and Ecuador.

Landholdings of operated land in most of the Latin American countries are small; the vast majority are less than one hectare in size. The size of average landholdings varies from 0.61 hectares in Vietnam to around 6 hectares in Nicaragua. Average land holdings are smallest in Asia and Eastern Europe and largest in Latin America most likely reflecting differences in population densities and, for transition countries in Eastern Europe, the specific patterns of de-collectivisation followed by these two countries following the collapse of the socialist system.

Land ownership tends to be concentrated, although this varies by country and region. Landholdings in the Latin American countries are the most concentrated, with between 70 and 80% of total land held by the top quintile of land owners. For most of the countries in Asia, around 60% of total land is held by the largest quintile. (Indonesia is the exception, with 83 percent), while the African countries follow with around 53%. Albania is the country where owned land is most equitably distributed with only 43% held by the top quintile.

Looking back at table 22, is general a positive relationship between average size of land owned and welfare, although in Indonesia the poor own on average larger plots and in other cases it is apparent at the extremes but not in the central part of the welfare distribution (as in the four Latin American countries). This can be read as confirmation that for a number of these households, even if landed and to some extent involved in agriculture, assets other than land are more crucial in determining welfare levels.

To get a sense of who in the wealth distribution owns the greatest share of land in a given country, figure 24 presents the relationship between expenditures levels and the share of total land owned, smoothed using a lowess estimator. In all countries, the curve is upward sloping indicating that wealthier agricultural households own a greater share of total agricultural land than poorer households. Among the Asian RIGA countries, for example, the lower expenditure groups each owned around 2-3% of total land while the highest groups owns twice that amount, with particular concentration in Bangladesh. Among the Latin American countries, particularly sharp increases are seen at the higher end of the distribution suggesting greater land concentration Among the wealthiest.

8.Livestock

Despite the importance of livestock, issues of access to livestock have not been as extensively researched as issues related to land and human capital, and there is a tendency to consider them important solely for particular population subgroups (herders and pastoralists), while focusing most of the analysis of agricultural livelihoods on crop activities. The data in table 23 confirm the widespread ownership of livestock in the developing world . Between 46 and 85 percent of the rural household in the RIGA countries own some livestock such as cattle, horses, mules, goats, sheep or chickens. The type of live stock owned is however much more context specific, while in some countries (Nepal, Pakistan and to a lesser extend Albania) most livestock owners own some cattle, in other countries (and notably in all our African countries) the bulk of herds are formed of smaller animals. To get a sense of overall ownership, livestock are aggregated into tropical units, which were defined earlier [HERE HERE no they weren't – define them here].

As is the case for land holdings, livestock holding on average tend to be small in size, ranging from 0.32 in Malawi to 2.77 in Ecuador. By region they tend to be smaller in Africa and Asia and larger in Latin America. As is the case with agricultural land, the share of households that own livestock is not necessarily positively related to consumption expenditure. This is true only in Bangladesh, Pakistan and Bulgaria. In Latin American as well as Ghana and Nigeria, wealthier households are less likely than poorer households to own livestock. As also shown in the table, however, average holdings tend to increase with wealth, with the exception of Ghana, Nigeria, Vietnam and Albania.

While ownership of livestock is relatively evenly distributed, total livestock holdings are concentrated, both over livestock owners and wealth quantiles particularly among the Latin American countries. Among the countries in the region, the top quantile of livestock owners (in terms of size of holdings) hold between 71 and 93 percent of total livestock, followed by the African countries in the data set, with between 67 and 75 percent (last column in table 23) . Herds are relatively less concentrated in the Asian and Eastern European countries, where the same indicator stands at around 50%. The particular concentration of livestock Among the Latin American countries is most evident in figure 25, which presents the relationship between expenditure levels and the share of total livestock owned, using a lowess estimator. Wealthier agricultural household also own a greater share of total livestock in Malawi, Madagascar and Bangladesh. Contrary to the land distribution by wealth in figure 24, however livestock are progressively distributed in a number of countries, including Ghana, Nigeria, Albania, Nepal and Vietnam.

The rapidly growing demand for livestock products in developing countries reinforces the value of livestock as part of household assets portfolios and its potential to reduce poverty . In 14 countries analyzed, the majority of rural households own some livestock, with shares above 80% in Albania,

Ecuador, Nepal and Vietnam. Even Among the poorest households, more than 40% own livestock, except in Pakistan. Many household holdings consist of small animal species, fewer than 40% of rural household own cattle. The share of livestock owned by the top fifth of livestock holders varies between 42% and 93% , showing that livestock holdings tend to be quite unequal. Indeed, these inequalities are similar to those for landholdings.

5. Agriculture For Development and Poverty Alleviation

Agriculture can work in concert with other sectors to produce faster growth, reduce poverty, and sustain the environment. In this paper agriculture consists of crops, live-stock, agroforestry and aquaculture. It does not include forestry and commercial capture fisheries because they require vastly different analysis. But interactions between agriculture and forestry are considered in the discussions of deforestation, climate change, and environmental services. Agriculture contributes to poverty alleviation and development as an economic activity, as a livelihood and as a provider of environmental services, making the sector a unique instrument for development. As an economic activity, agriculture can be a source of growth and poverty reduction for the national economy, a provider of investment opportunities for the private sector, and a prime driver of agriculture-related industries and the rural nonfarm economy.

Two thirds of the world's agricultural value added is created in developing countries. In agriculture-based countries it generates an average of 29% of the gross domestic product (GDP) and employs 65% of the labour force. The industries and services linked to agriculture in value chains often accounts for more than 30% of GDP in transforming and urbanizing countries. Agricultural production is important for food security because it is a source of income for the majority of rural poor. It is particularly critical in a dozen countries of Sub-Saharan Africa, with a combined population of about 200 million and millions with highly variable domestic production, limited tradability of food staples, and foreign exchange constraints in meeting their food needs through imports. These countries are exposed to recurrent food emergencies and the uncertainties of food aid, and for them, increasing and stabilizing domestic production is essential for food security and poverty alleviation. Also as a livelihood activity agriculture is a source of livelihoods for an estimated 86% of rural people in these countries . It provides jobs for 1.3 billion smallholders and landless workers, 'farm- financed social welfare' when there are urban shocks, and a foundation for a viable rural communities.

Of the developing world's 5.5 billion people, 3 billion live in rural areas, nearly half of humanity. Of these rural inhabitants an estimated 2.5 billion are in households involved in agriculture, and 1.5 billion are in smallholder households. The recent decline in the \$1-a day poverty rate in developing countries from 28% in 1993 to 22% in 2002 has been mainly the result of falling rural poverty (from 37% to 29%) while the urban poverty rate remained nearly constant (at 13%). More than 80% of the decline in rural poverty of Sub-Saharan Africa is attributable to better conditions in rural areas rather than to out-migration of the rural poor . So, contrary to common perception, migration to cities has not been the main instrument for rural (and Sub-Saharan Africa) poverty alleviation.

The large decline in the number of rural poor (from 1,036 million in 1993 to 883 million in 2003) has been confined to East Asia and the Pacific (Graph 1 see last page of this paper).In South Asia and Sub-Saharan Africa the number of rural poor has continued to rise and will likely exceed the number of urban poor until 2040.In these regions, a high priority is to mobilize agriculture for poverty reduction.

Also as a provider of environmental services i.e. in using (and frequently misusing) natural resources, agriculture can create good and bad environmental outcomes. It is by far the largest user of water, contributing to water scarcity. It is a major player in underground water depletion, agrochemical pollution, soil exhaustion, and global climate change, accounting for up to 30% of greenhouse gas emissions. But it is also a major provider of environmental services, generally unrecognized and unremunerated, sequestering carbon, managing water-sheds, and persevering biodiversity. With rising resource scarcity. Climate change, and concerns about environmental costs, business as usual in the way agriculture uses natural resources is not an option. Making the farming systems of the rural poor less vulnerable to climate change is imperative . Managing the connection among agriculture, natural resource conservation and the environment must be an integral part of using agriculture for development and poverty alleviation.

In agriculture-based countries, agriculture is a major source of economic growth,. Accounting for 32% of GDP growth on average, mainly because agriculture is a large share of GDP and most of the poor are in rural areas(70%).This group of countries has 417 million rural inhabitants, mainly in Sub-Saharan Africa. Eighty-two percent of the rural Sub-Saharan population lives in agriculture-based countries. Classifying regions within countries according to their agricultural potential and access to markets shows that 61% of the rural population in developing countries lives in favored areas, irrigated, humid, and semi-humid areas with little moisture stress, and with medium to good market access (less than five hours from a market town of 5.000 or more) but two-thirds of the population in Sub-Saharan Africa lives in less-favoured areas defined as arid and semi-arid or with poor market access. In Sub-Saharan Africa the poverty rate is higher in less favoured areas, but most of the poor lives in favoured areas. So using agriculture to reduce poverty requires not only investing in less favoured areas to combat extreme poverty , but also targeting the large number of poor in favoured areas.

Agriculture has a strong record in economic development i.e agriculture has a special ability to reduce poverty across all countries types. Cross- country estimates show that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture. In Ghana, being part of Sub-Saharan Africa, rural household accounted for a large share of a steep decline in poverty induced in part by agricultural growth.

Agriculture is also the leading sector overall growth in all agricultural developing Sub-Saharan countries. Agriculture has a well-established record as an instrument for poverty alleviation. But can it also be the leading sector of a growth strategy for the agriculture based developing countries ? Besides the sheer size of the sector, two arguments, applied to the agriculture based countries of Sub-Saharan Africa, support the view that it can. The first is that many of these countries, food remains, imperfectly tradable because of high transaction costs and the prevalence of staple foods that are only lightly traded, such as roots and tubers and local cereals. So, many of these countries must largely feed themselves. Agricultural productivity determines the price of food, which in turn determines wage costs and competitiveness of the tradable sectors. Hi productivity farming of food staples is thus a key to growth.

The second is that comparative advantage in the tradable subsectors will still lie in primary activities (agriculture and mining) and agro-processing for many years, because of resource endowments and the difficult investment climate for manufactures. Many developing economies depend on a diverse portoflio of unprocessed and processed primary-based exports (including tourism) to generate foreign exchange. Growth in both the non-tradable and tradable sectors of agriculture also induces strong growth in other sectors of the economy through multiplier effects.

Agriculture can be the main source of growth for the agriculture-based Sub-Saharan countries and can reduce and improve the environment in all three country types albeit in different ways . This requires improving the asset position of the rural poor, making smallholder farming more competitive and sustainable, diversifying income sources towards the labour market and the rural nonfarm economy and facilitating successful migration out of agriculture.

Also increased assets contribute to poverty reduction; household assets are major determinants of the ability to participate in agricultural markets, secure livelihoods in subsistence farming, compete as entrepreneurs in the rural nonfarm economy and find employment in skilled occupations. Three core assets are land, water, and human capital. Yet the assets of the rural poor are often squeezed by population growth, environmental degradation, expropriation by dominant interests, and social biases in policies and in the allocation of public goods.

Nowhere is the lack of assets greater than in Sub-Saharan Africa where farm sizes in many of the more densely populated areas are unsustainably small and falling, land, is severely degraded, investment in irrigation is negligible and poor health and education limited productivity and access to better options. Population pressure together with declining farm size and water scarcity are also major challenges in many parts of Sub-Saharan Africa .

Enhancing assets may require significant public investments in irrigation, health and education. In other cases, it is more a matter of institutional development, such as enhancing the security of property rights and the quality of land administration. Increasing assets may also call for affirmative action to equalize chances for disadvantaged or excluded groups, such as women and ethnic minorities in Sub-Saharan Africa.

6.Rural finance

The microfinance revolution, providing access to credit without formal collateral, has made possible loans for millions of people, especially women. It has reached most agricultural activities, except in high turnover activities such as small livestock and horticulture. The range of financial products available to the rural poor has broadened to include savings, money transfers, insurance services and leasing options.

With the rise of integrated supply chains and contract farming financial intermediation through interlinked agents is becoming more common. Information technologies are reducing transactions costs and making loans less costly in rural areas, for example, using agricultural credit cards to purchase inputs or cellular phones to complete banking transactions. Credit reporting bureaus covering microfinance institutions and the lower tier of commercial banks also help small holders capitalize on the reputations they establish as microfinance borrowers to access larger and more commercial loans. Many of these innovations are still at the pilot stage, requiring evolutions and scaling up to make a real difference for smallholder competitiveness.

7.Moving Beyond Farming.

A dynamic rural economy and the skills to participate in it can create rural employment. With rapid rural population growth and slow expansion of agricultural employment, creating jobs in rural areas is a huge and insufficiently recognized challenge. In Sub-Saharan Africa self –employment in agriculture is still by far the dominant activity for the rural labour force, especially for women. But with rapidly growing rural populations and declining farm sizes, the rural employment problem will need to be addressed there as well.

The rural labour market offers employment possibilities for the rural populations in the rural nonfarm sector. But opportunities are better for those with skills and women with lower education levels are at a disadvantage. Migration can be a climb up the income ladder for prepared, skilled workers, but it can be a simple displacement of poverty to the urban environment for others. The policy priority is to create more jobs in both agriculture and the rural non-farm economy. The basic ingredients of a dynamic rural nonfarm economy of Sub-Saharan Africa are a rapidly growing agriculture and a good investment climate. Linking the local economy to broader markets by reducing transaction cost, investing in infrastructure, and providing business services and market intelligence are critical.

Clusters of farms in a geographic area coordinating to compete in supplying dynamic markets have been effective, with well documented experiences for non-traditional exports and dairy production in Sub-Saharan Africa. The real change is to assist the transition of the rural population into higher paying jobs. Labour regulations are needed that incorporate a larger share rural workers into the formal market and reduce discrimination between men and women. Education, skills, and entrepreneurship can be fostered by providing incentives for parents to better educate their children, improving the quality of schools, and providing educational opportunities relevant to emerging job markets of Sub-Saharan African countries.

8. Water

Access to water and irrigation is a major determinant of land productivity and the stability of yields. Irrigated land productivity is more than double that of rainfall land. In Sub-Saharan Africa, only 4% of the productive area is under irrigation, compared with 39% in South Asia and 29% in East Asia. With climate change leading to rising uncertainties in rain fed agriculture and reduced glacial runoff, investment in water storage will be increasingly critical. Even with growing water scarcity and rising costs of large scale irrigation schemes, there are many opportunities to enhance productivity by revamping existing schemes and expanding small-scale schemes and water harvesting.

9. Making Small Holder Farming more Productive and Sustainable

Improving price the productivity, profitability and sustainability of small holder farming is the main pathway out of poverty in using agriculture for development. What is required? A broad array of policy instruments, many of which apply differently in commercial smallholders and to those in subsistence farming, can be used to achieve the following:

(a) Make product markets work better

i.e Food staple markets, Traditional bulk exports, High-value markets, Input markets

(b) Improve access to financial services and reduce exposure to uninsured risks

(c) Enhance the performance of producer organizations

(d) Promote innovation through publicly financed science and technology

10. Making Agriculture more Sustainable and a Provider of Environmental Services

The environmental footprint of agriculture has been large, but there are many opportunities for reducing it. Since the 1992 Earth summit, it is generally accepted that the environmental agenda is inseparable from the broader agenda of agricultural development, and the future of agriculture is intrinsically tied to better stewardship of the natural resource base on which it depends.

Both intensive and extensive agriculture face environmental problems, but of different kinds. Agricultural intensification has generated environmental problems from reduced biodiversity, mismanaged irrigation water, agrochemical pollution, and health costs, and deaths from pesticide poisoning. The livestock revolution has its own costs, especially in densely populated and periurban areas, through animal waste and the spread of animal born diseases such as avian influenza.

Many less-favoured areas suffer from deforestation, soil erosion, desertification and degradation of pastures and watersheds. In the East African highlands, soil erosion can result in productivity losses as high as 2-3 percent a year, in addition to creating off site effects such as the siltation of reservoirs.

The answer is not to slow agricultural development, but to seek more sustainable production systems and to enhance agriculture's provision of environmental services. Many promising technological and institutional innovations can make agriculture more sustainable with minimum tradeoffs on growth and poverty reduction.

Water management strategies in irrigated areas must improve water productivity, meeting demands of all uses and the environment, and reduce water pollution and the unsustainable mining of groundwater. These strategies depend on removing incentives for wasteful water usage, devolving water management to local user groups, investing in better technologies, and regulating externalities more effectively. Decentralized governance in irrigation management has a higher chance of success if legal frameworks clearly define the roles and rights of user groups and if the capacity of groups to manage irrigation collectively is increased.

Better technologies and better ways of managing modern farm inputs can also make rain fed farming more sustainable. One of agriculture's major success stories in the past two decades is low (or zero) tillage. This approach has worked in commercial agriculture. Among small holders in Sub-Saharan Africa including Ghana. In less favoured regions, community-based approaches to natural resource management, such as the watershed management program in Sub-Saharan Africa, offer significant promises. As survey data from 20 countries show, women's active engagement in community organizations improves the effectiveness of natural resources management and the ability to resolve conflicts.

Getting incentives right is the first step towards sustainable resource management. Widespread adoption of more sustainable approaches is often hindered by inappropriate pricing and subsidy policies and the failure to manage externalities. Strengthening property rights (as with agroforestry parkland in Niger) and providing long term incentives for natural resource management with off-farm benefits (Such as matching grants for soil conservation) are necessary in both intensives and extensive farming areas. Inappropriate incentives that encourage mining resources such as subsidies to water intensive crops that cause groundwater over pumping must be reduced.

Reforms are often a politically difficult. Better water measurement through technology (remote Sensing), better quality of irrigation services, and greater accountability to water users can

generate political support for otherwise stalled reforms. Payments for environmental services can help overcome market failures in managing environmental externalities. Watershed and forest protection create environmental services (clean drinking water, stable water flows to irrigation systems, carbon sequestration, and protection of biodiversity) for which providers should be compensated through payments from beneficiaries of these services. Interest has been growing, particularly in Sub-Saharan Africa and payments induced a reduction in the area of degraded pasture and annual crops by more than 50% in favour of silvo-pastoralism, half of it by poor farmers.

Environmental certification of products also allows consumers to pay for sustainable environmental management, as practiced under fair trade or shade-grown coffee.

11. The Urgency of Dealing with Climate Change

Poor people who depend on agriculture are the most vulnerable to climate change. Increasing crop failures and livestock deaths are already imposing high economic losses and undermining food security in parts of Sub-Saharan Africa, and they will get far more severe as global warming continues. More frequent droughts and increasing water scarcity may devastate large part of the tropics and undermine irrigation and drinking water in entire communities of already poor and vulnerable people.

The international community must urgently scale up its support to climate-proof the farming systems of the poor, particularly in Sub-Saharan Africa the Himalayan regions, and the Andes. Based on the polluter pays principle, it is the responsibility of the rich countries to compensate the poor for costs of adaptation. So far, Global commitments to existing adaptation funds has been grossly inadequate.

Developing –country agriculture and deforestation are also major sources of greenhouse gas emissions: they contribute an estimated 22 percent and up to 30 percent of total emissions, more than half of which is from deforestation largely caused by agricultural encroachment (13 million hectares of annual deforestation globally) (figure 8). Carbon –trading schemes especially if their coverage is extended to provide financing for avoided deforestation and soil carbon sequestration (for example via conservation tillage) offer significant untapped potential to reduce emissions from land use change in agriculture. Some improvements in land and livestock management practices (for example, conservation tillage and agroforestry) are often win-win situations: after the initial investments, they can result in more productive and sustainable farming systems.

12. Defining an agriculture for development agenda

Opening and widening pathways out of poverty: Rural households pursue portfolios of farm and nonfarm activities that allows them to capitalize on the different skills of individual and to diversify risks. Pathways out of poverty can be through smallholder farming ,wage employment in agriculture, wage or self-employment in the rural non-farm economy, and migration out of rural areas or some combination thereof . Gender differences in access to assets and mobility constraints are important determinants of available pathways.

Making agriculture more effective in supporting sustainable growth and reducing poverty starts with a favorable socio-political climate, adequate governance, and sound macroeconomic

fundamentals . It then requires defining an agenda for each country type, based on a combination of four policy objectives, forming a policy diamond.(figure 9)

Objectives 1.Improves access to markets and establish excess value chains

Objectives 2. Enhanced smallholder competitiveness and facilitate market entry

Objectives 3.Improve livelihoods in subsistence farming and low-skill rural occupations

Objectives 4. Increase employment in agriculture and the rural nonfarm economy, and enhance skills

13.Agriculture –Based Countries: Achieving Growth and Food Security

Sub-Saharan countries account for over 80% of the rural population in the agricultural –based countries. For them, with both limited tradability of food and comparative advantage in primary subsectors, agricultural productivity gains must be the basis for national economic growth and the instruments for mass poverty reduction and food security. This poses a huge challenge to governments and international community, but there is a little alternative to success in this undertaking , and there are new opportunities that provide a basis for optimism.

As macroeconomic conditions and commodity prices improved in Sub-Saharan Africa starting in the mid-1990s, agricultural growth accelerated from 2.3 percent per year in the 1980s to 3.8 percent per year between 2001 and 2005. Rural poverty started to decline where growth occurred , but rapid population growth is absorbing much of the gain, reducing per capita agricultural growth to 1.5 percent. Faster growth and poverty reduction are now achievable, but they will require commitments, skills, and resources.

Diverse local conditions in Sub-Saharan Africa produced a wide range of farming systems and reliance on many types of food staples, implying a path to productivity growth that differs considerably from that in Asia. Although diversity complicates the development of new technologies, it offers a broad range of opportunities for innovation. Dependence on the timing and amount of rainfall increases vulnerability to water shocks and limits the ability to use known yield-enhancing technologies. But the untapped potential of storing water and using it more efficiently is enormous. Small and landlocked countries acting alone cannot achieve economies of scale in product markets and in research and training, which makes regional integration important. Low population density that increases the cost of providing infrastructure services and the loss of human resource because of HIV/AIDS impose additional constraints.

The agenda for Sub-Saharan Africa is to enhance growth by improving smallholder competitiveness in medium and higher potentials areas, where returns on investment are highest, while simultaneously ensuring livelihoods and food security of subsistence farmers. Getting agriculture moving requires improving access to markets and developing modern market chains. It requires a smallholder based productivity revolution centered on food staples but also including exports. Long –term investments in soil and water management are needed to enhance the reliance of farming systems, especially for people who rely on subsistence farming in remote and risky environments . The agenda also requires capitalizing on agricultural growth to activate the rural non-farm economy in producing non tradable goods and services. The agenda must recognize the often dominant role of women as farmers, agro-processors and traders in local markets.

The Sub-Saharan complex implies four distinct features of an agriculture for development agenda. First, a multi-sectoral approach must capture the synergies between technologies (seed, fertilizer, livestock breeds) sustainable water and soil management, institutional services (extension, insurance, financial services), and human capital development (education, health) all linked with market development. Second agricultural development actions must be decentralized to tailor them to local conditions. These include community driven approaches with women, who account for the majority of farmers in the region, playing a leading role. Third the agenda must be coordinated across countries to provide an expanded market and achieve economies of scale in R&D. Fourth, the agenda must give priority to conservation of natural resources and adaptation to climate change to sustain growth.

This agenda will require macroeconomic stability, policies to improve producer incentives and trade, and sharply increased public investment especially in infrastructure, roads and communications to improve market access, and in R&D to address Sub-Saharan Africa's distinct crops and agro-ecologies, as proposed by the New Partnership for the development and poverty reduction of Sub-Saharan Africa.

The recent change of the rate of growth of Sub-Saharan agriculture has been achieved through improved price incentives, macro and sectoral reforms, and higher commodity prices. As the easy gains from price reforms have been captured in many countries, future growth will have to rely more on increased productivity. The increased willingness of government, the private sector, and donors to invest in Sub-Saharan agriculture opens a window of opportunity that should not be missed.

14. Transforming Countries

Reducing rural/urban income disparities and rural poverty in transforming countries with 600 million rural poor and 2.2 billion of rural inhabitants, the nonagricultural sectors have been the fastest growing in the Sub-Saharan Africa. The main focus of agriculture for development is to narrow rural/urban income disparities and reduce rural poverty, while avoiding the subsidy and protection traps, challenges poorly address thus far (figure 11).

Given the major political attention to widening income disparities, there are strong pressures to better use the powers of agriculture for development. In these countries, agriculture is almost exclusively in the hands of smallholders. Continuing demographic pressures imply rapidly declining farm sizes, so minute that they can guarantee survival if off-farm income opportunities are not available. Competition over access to water is acute, with rising urban demands and deteriorating quality from runoffs. As urban incomes rise, pressures to address rural-urban income disparities through subsidies would compete for fiscal expenditures, at a high opportunity cost for public goods and rural basic needs. On the other hand, addressing those disparities through import protection would elevate food costs for the large masses of poor consumers who are net food buyers.

Because of demographic pressures and land constraints, the agenda for transforming countries must jointly mobilize all pathways out of poverty: farming, employment in agriculture and the rural nonfarm economy and migration. Prospects are good for promoting rural incomes and avoiding the subsidy protection trap, if the political will is mustered. Rapidly expanding markets for high value products especially horticulture, poultry, fish, and dairy offer an opportunity to diversify farming systems and develop a competitive and labour intensive small holder sector. Export

Markets for nontraditional products are also accessible because transforming countries have a comparative advantage in labour intensive activities.

Many Sub-Saharan countries have high levels of poverty in less-favored regions that require better infrastructure and technologies adapted to these regions. To confront rural unemployment, a complementary policy objective is promoting a dynamic rural nonfarm sector in secondary towns, linked to both agriculture and the urban economy. In all transforming Sub-Saharan Africa, the transfer of labour to the dynamic sector of the economy must be accelerated by massive investments in skills for this generation. The momentous changes this restructuring implies must be insured by effective safety-net programs to allow households to assume risks in moving to their best options. Successfully meeting the disparity problem in transforming Sub-Saharan countries can make a huge dent in Sub-Saharan poverty.

15. Urbanized Countries of Sub-Saharan Africa

The broad aim is to capitalize on rapid expansion of modern domestic food markets and booming agricultural subsectors to sharply reduce the remaining rural urban poverty, still stubbornly high. The urbanized countries, with 32 million rural poor representing 39% of all their poor are experiencing the supermarket revolution in food retailing. For small holders, being competitive in supplying supermarkets is a major challenge that requires meeting strict standards and achieving scale in delivery, for which effective producer organizations are essential. Increasing the access of smallholders to assets, particularly land, and increasing their voice in unequal societies can enhance the size and competitiveness of the smallholder sector. Beyond farming, territorial approaches are being pursued to promote local employment through interlinked farming and rural agroindustry and these experiences need to be better understood for wider application.

Agricultural growth is especially important to improve well-being in geographic pockets of poverty with good agricultural potential. For region without such potential, the transition out of agriculture and the provision of environmental services offer better prospects. But support to the agricultural component of the livelihoods of subsistence farmers will remain an imperative for many years.

16. Implementing the Agriculture for Development Agenda

The agriculture for development agenda presents two challenges for implementation. One is managing the political economy of agricultural policies to overcome policy biases, under-investment and mis-investment. The other is strengthening governance for the implementation of agricultural policies, particularly in the agriculture-based and transforming countries for which governance gets low scores (figure 12). Insufficient attention to these political economy and governance challenges was a major reason several key recommendations of the 1982 World Development Report on agriculture were not fully implemented, particularly those for trade liberalization, increased investment in infrastructure and R&D in Africa, and better delivery of health and education services to rural populations.

The prospects are brighter today than they were in 1982. The anti-agriculture bias in macroeconomic policies has been reduced thanks to broader economic reforms. Agriculture is likely to benefit from other general governance reforms that are now high on the agenda, such as decentralization and public sector management reforms, although reforms specific to using agriculture for rural development are yet to be widely implemented. There is also evidence that the

political economy has been changing in favour of agriculture and rural development. Both rural civil society organizations and the private sector in agriculture value chains are stronger than they were in 1982. Democratization and the rise of participatory policy making have increased the possibilities for smallholder farmers and the rural poor to raise their political voice. The private agri-business has become more vibrant, especially in the transforming and urban countries. New powerful actors entered agricultural value chains, and they have an economic interest in a dynamic and prosperous agricultural sector and a voice in political affairs. Yet these improved conditions alone do not guarantee the more successful use of agriculture for development, and smallholders must have their voice heard in political affairs, and policy makers and donors must seize the new opportunities.

The third sector, communities, producer and other stake holders organization and nongovernmental Organizations (NGOs) can improve representation of the rural poor and, in so doing, governance. Producer organizations can give political voice to smallholders and hold policy makers and implementing agencies accountable by participating in agricultural policy making, monitoring the budget and engaging in policy implementation. In Senegal, the Conseil National de Concertation et de Coopération des Ruraux, an umbrella organization of producer organizations, is active in the development and implementation of national agricultural strategies and policies. Freedom of association, a free press, and investment in the social capital of rural organizations including women's organizations, are important for such demand-side strategies of improving governance.

By bringing government closer to rural people, decentralization holds the potential to deal with the localized and heterogenous aspects of agriculture, especially for extension. But not all agricultural services should be decentralized, as some such as scientific research and animal disease surveillance have important economies of scale. Decentralized institutions need to address local elite capture and social exclusion, often prevalent in agrarian societies. Elsewhere corruption has been reduced by grassroots monitoring systems, government audits with results diffused by the media and the use of information and communication technologies to keep records and share information. Community-driven development (CDD) can harness the potentials of rural communities and their local knowledge, creativity and social capital. Decentralization and CDD typically contribute to the agriculture for development agenda in a sequenced way, focusing on basic services and public goods first, and engaging in income-generating activities once the most basic needs have been met. Territorial development can help manage economic projects with a broader scale than the CDD approach.

In the agriculture-based countries, donors are extraordinarily influential. In 24 Sub-Saharan countries, donor contribution represents at least 28% of agricultural development spending and more than 80% in some countries. Country led agricultural strategies and the broader poverty reduction strategies provide a frame work for donors to align their support to the agricultural sector and with each other, using the government's public expenditure and procurement systems as mechanisms for program implementation. At the regional level, the comprehensive Africa Agricultural Development Program provides priorities for coordinating donor investments. Although these national and regional efforts provide the institutional frameworks for donor support to agriculture, progress of implementation has been slow.

17.Reforming Global Institutions

The agriculture for development agenda cannot be realized without more and better international commitments. And the overarching global tasks of the 21st century ending hunger and poverty,

sustaining the environment, providing security and managing global health, will not be accomplished without agriculture. The global agricultural agenda has a multiplicity of dimension: establishing fair rules for international trade, agreeing on product standards and intellectual property rights, providing new technologies for the benefit of the rural poor, and preventing livestock diseases, conserving biodiversity, and mitigating and adapting climate change.

With their narrow sectoral focus, the global institutions created for agriculture in the 20th century, despite their many achievements, are inadequately prepared to address today's interrelated and multi-sectoral agendas. Institutional reforms and innovations are needed to facilitate greater coordination across international agencies and with the new actors in the global arena, including civil society, the business sectors, and philanthropy. Implementing the global agenda requires a mix of institutional arrangements, such as the consultative group on International Agricultural Research, the Food and Agricultural Organization of the United Nations, and the International Fund for Agricultural Development, can provide long term support and commitment by improving their efficiency and cross-agency coordination. Cross-sectoral, issue-specific networks can reach quickly to emergencies, such as controlling avian Influenza, and seize emerging opportunities, such bio-fortification through nutrient-enhanced crops.

In other cases, mainstreaming global priorities, such as adaptation to climate change, into increased donor aid to agriculture may work best. Delivering on the international agenda is a matter not only of self-interest, which extends broadly in a global world, but also of equity and justice between the developed world and developing Sub-Saharan Africa and between present and future generations.

If the Sub-Saharan African developing countries are committed to reducing poverty and achieving sustainable growth, the powers of agriculture for development must be unleashed. But there are no magic bullets. Using agriculture for development is a complex process for Sub-Saharan Africa. It requires broad consultations at the country level to customize agendas and define implementation strategies. It also requires having agriculture work in concert with other sectors and with actors at local, national and global levels. It requires building the capacity smallholders and their organizations, private agribusiness, and the state. It requires institutions to help agriculture reduce poverty, serve development and technologies for sustainable natural resource use. It also requires mobilizing political support, skills, and resources. There is growing recognition Among governments of Sub-Saharan African countries and donors that agriculture must be a prominent part of the development topic, whether for delivering growth in the agriculture-based countries or for reducing rural poverty and addressing the environmental topic everywhere. Today's improved opportunities and greater willingness to invest in agriculture create optimism that agriculture can contribute to Sub-Saharan development and poverty alleviation. The window of opportunity that this offers should not be missed because success will provide high payoffs toward the development goals of Sub-Saharan Africa and beyond.

18. Concluding remarks on addressing the challenge of alleviating rural poverty

The magnitude of the problem of rural poverty in developing countries can seem overwhelming. About 2.6 billion people live on less than two dollars a day, and nearly a billion live on less than one dollar a day. In sub-Saharan Africa, agricultural-based countries are poor in terms of capital per capita GDP and face a rural poverty rate of 51% on average. Transforming economies are not yet urbanized but dependent on agriculture and are mainly in Asia. They have a rural poverty rate of 28%, but represents 77% of the developing world's rural population and 74% of the rural poor. Developing urbanized economies have a much lower rate of rural poverty, 13% but only represents 9% of the developing world's rural population and 4% of the rural poor. Progress toward alleviating poverty has been insufficient in many countries, notably in South Asia and Sub-Saharan Africa, but there has been progress elsewhere, with a fall in the absolute number of the world's poor, mainly due to economic growth in East Asia, especially China. Also in Latin America the number of poor has been falling in number and percentages since the year 2000. These differences in the trends in poverty across regions highlight the importance of economic growth generally to poverty reduction and the importance of public policies that foster pro-poor growth.

This background paper concentrated its attention on household –level attributes and decisions activities and assets which underline the practical links between public policies and the enhancements of opportunities for households to exit poverty. One basic link is between policy and growth since the expansion of employment opportunities beyond the farm is associated with economic growth. Growth also delivers fiscal resources that permit expansion of public policies, in infrastructure and education, and also in safety nets for those who find the new opportunities related to growth out of reach. A second basic link is between access to assets and the ability to exit poverty. We have focused on three key assets in our discussion: education, farm land and public infrastructure.

A number of key measures emerge. First, an increase in the diversification of income sources is important to fighting poverty through the incorporation of more rural workers into non-farm activities. Across countries with economic development overall there is an increase in the share of non-farm income in rural areas. Second, the relative importance of the three basic assets, bundled or by themselves, varies by country and context. However, in most cases the poor are those with low levels of all three assets. Third, in few of the countries under study did a significant share of rural households have high levels of all three assets, or even two of the three. Most importantly higher levels of education are almost without exception associated with higher household incomes, especially when families have access to other assets, in particular infrastructure and the opportunity and the ability to engage in multiple activities. Moreover, higher levels of education permit mobility within and between rural and urban areas, and are associated with higher individual returns to labour.

The scope is limited, however, for public policies with an impact on rural poverty in the medium term. For adults the levels of schooling is difficult to improve significantly beyond some initiatives for training. For younger rural residents, investment in education is the principal avenue for escaping poverty as they reach working age. The evidence considered here points towards education for the young as a long-term anti-poverty strategy, not only in terms of the quantity of schools and teachers, but incentives for attendance and improved quality of instruction. Beyond a general education policy for rural areas, special attention should be given to marginalized groups, which often have higher rates of poverty, less access to infrastructure, and lower levels of schooling.

In contrast, it is less clear whether it is possible to expand the size of land holdings to such a degree that it might significantly raise incomes. Expanding land holdings over a feasible range might

increase agricultural production but raise family income only slightly. Moreover there are other policy considerations. Surplus land might not be available because of population density, and the costs of land transfer are large and many times ineffective without further, expensive support to beneficiaries for working capital and long-term investments. Further, involuntary land transfers generate political tensions and undermine the credibility of property rights. The encouragement of land markets, however, especially rental markets might offer an attractive option for farm-income based families with the opportunity to expand. Again in the case of marginalized groups, specific policies should be considered in the light of the legal and institutional obstacles they face in making better use of land resources. Similar institutional improvements could be applied to water markets.

In the medium term improving access to infrastructure appears to be among the most feasible and effective strategies. Rural infrastructure both improves farmer access to markets and expands employment opportunities in the non-farm sector. As discussed in the previous sections and supported by data from RIGA countries, investments in infrastructure, most notably rural roads, tend to have large impacts on poverty reduction, and there is evidence that they also enhance agricultural productivity. The literature on the complementarities of policy instruments shows that with telephones and roads, households can diversify income sources. A policy of providing better rural infrastructure could also influence the accumulation of human capital, improving both access to schooling and healthcare. Indeed, improved road networks and the consequent improvement in local transportations and safety, leads to improved school attendance.

The wider accessibility of rural areas produces a range of benefits, one in particular, more time for studying, in turns improves school performance. Investments in water and sanitation reduce infant, child and maternal mortality, and increase school attainment. The mix of public expenditures can take advantage of these synergies.

For many farming areas agriculture will remain for the foreseeable future not only the mainstay of economic activity but the main income source of the bulk of rural families and particularly the poor. While infrastructure investments would enhance access to markets, and reduce the costs of all transactions for agriculture generally, in order to improve the wellbeing of most smallholders policy makers should also consider the merits of specific institutional innovations. In the longer run many countries would benefit rural areas, especially by the improvement of the security of property rights, including the facilitation land transfer and rentals. In terms of having a short-term, program-oriented focus on farm families, development efforts can encourage farmer organizations, such as cooperatives, that might better be able to take advantage of scale economies, both for input purchases, technological transfers, and in accessing markets.

This background paper has shown the importance of different economic activities for improving rural family incomes, and the importance of the access to the assets that allows households to take advantage of available opportunities. One can extract from the results of previous studies, and the evidence presented here for a sample of countries, that, in order to reduce rural poverty, policies should concentrate both on improving household activities already available, most prominently farming, and on expanding the range of potential activities of family members. The lessons from experience and much of the rural development literature is that the income generating potential, the ability to access and take advantage of activities, depends crucially on access to assets, such as education, land and infrastructure.

Bibliographical Note

1. This Paper draws on World Bank World Development Report 2000/2001 and numerous outside sources. Background papers and notes were prepared by Ali, Mubarik "Horticulture Revolution for the poor: Nature, Challenges and Opportunities", Alderman, Harold "Managing Risks to Increase Efficiency and Reduce Poverty", Anderson, Jock "Agricultural Advisory Service" Anriquez, Gustavo, and Genny Bonomy "Long-Term farming and Rural Demographic Trends", and Be'rdegue, Julio, Alexander Schejtman, Manuel Chiriboga, Felix Modrego, Romain Charnay, and Jorge Ortega "Towards National and Global Agenda for Agriculture for Development: Latin American and the Caribbean."

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