

# Country Successes in Reducing Hunger:

*How they did it, and why other donors and governments should change policy*

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# Introduction

From 1970 to 1995 the world made progress in reducing the number of hungry people but the figure always remained above 750 million. Since then, the number has progressively risen, increasing to over a billion in 2009, and remaining above 900 million in 2010.<sup>1</sup> But in this rather dismal global context, several countries have bucked the trend and successfully managed to drastically reduce the number of hungry people. This short analysis investigates how they did it and offers lessons for donors and Southern governments. Indeed, this experience challenges many current agricultural policies.

As well as reviewing the literature on how countries have reduced hunger, we look closely at four countries – Vietnam, China, Ghana and Bangladesh – which all show varying degrees of success in combating hunger. These four countries are all in the top 6 of ActionAid’s 2010 *Hunger Scorecard* report.<sup>2</sup> The two remaining countries – Brazil and Malawi – have received considerable international attention for their success in reducing the number of hungry people: Brazil, largely due to its range of social protection programmes, known as Zero Hunger; and Malawi, largely due to its input subsidy programme that provides fertilizer and seeds to farmers at low prices, which ActionAid has already analysed.<sup>3</sup>

## Number (and proportion) of people undernourished

	1990-92	1995-97	2000-02	2005-07
China	210 (18%)	142 (12%)	133 (10%)	130 (10%)
Vietnam	21 (31%)	17 (22%)	13 (17%)	10 (11%)
Ghana	4.2 (27%)	2.2 (12%)	1.8 (9%)	1.2 (5%)
Bangladesh	44 (38%)	54 (41%)	42 (29%)	42 (27%)

Source: FAO, *The State of Food Insecurity in the World 2010*, Table 1

# Four Country Successes

## CHINA

### Achievements

China has reduced poverty and hunger on a scale unparalleled in history:

- The number of poor people (living on less than \$1 a day) in rural China fell from around 490 million in 1979 to around 90 million in 2002.<sup>4</sup>
- In the 20 year period after 1981 the proportion of the population living below the poverty line fell from 53 to 8 per cent.<sup>5</sup>
- China reduced the number of undernourished people from around 1 in 3 of the population in 1980 to 1 in 10 today. The proportion of under-fives who are underweight decreased from 19 per cent to 7 per cent from 1990 to 2005.<sup>6</sup>

### Reasons for Success

The literature on China typically breaks the country's political and economic reforms into the 'incentive reforms' that dominated in 1978-84 and the gradual liberalization, and export-led growth, that began in 1985 and extended through the 1990s.<sup>7</sup> Although Chinese growth was high throughout the whole period, poverty reduction was concentrated in particular periods – mainly the first reform period of 1978-84, but also the period 1995-97.<sup>8</sup>

After 1978, the major factor explaining agricultural growth – which rose by a phenomenal 7 per cent a year<sup>9</sup> - was the Household Responsibility System reforms which reintroduced household farming after more than 30 years of collectivised agriculture. This big **land reform** programme gave farmers the ability to control land and to sell their surplus farm production to the market. More than 95 per cent of China's farmland was contracted out and returned to 160 million households.<sup>10</sup> Land distribution was highly egalitarian, allocated strictly according to household size and, as a result, each householding was fragmented into an average of nine tracts, even though the average size of a holding was only around 1.2 acres.<sup>11</sup> The egalitarian nature of the land reform ensured that the benefits derived from rural growth were widely shared.<sup>12</sup> An OECD study notes that 'through equal distribution of land use rights, China avoided having large numbers of rural landless workers vulnerable to famine or other economic shocks'.<sup>13</sup> The programme also prohibited farmers from selling land, while regulations also banned sales of land use rights, rentals and the use of the land as collateral.<sup>14</sup>

In addition to land reform, another key factor was the government's **crop pricing policy**. Crop procurement prices paid to farmers were raised 30 per cent over the five-year period after 1979, and supplies of chemical fertilizers were sharply increased and provided to farmers at subsidised rates.<sup>15</sup> Rural incomes increased 137 per cent over the period, grain production increased by 34 per cent and rural poverty declined by 22 per cent.<sup>16</sup> The second period of significant poverty reduction in China, the mid-1990s, also saw a steep rise in the farm purchase prices of some key commodities, especially food grain, which price increased by 40 per cent in 1994 and by a further 42 per cent in 1996. At the same time, however, the government reduced the number of commodities subject to state procurement and by 1993 more than 90 per cent of agricultural produce was being sold at market-determined prices.<sup>17</sup>

<b>Crop pricing and guaranteed market</b>
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A study for the International Food Policy Research Institute (IFPRI) notes that China's land reforms contrasted to other countries undergoing land reform where farmers' saw their input supplies and marketing chains disrupted. In China, however, farmers had a guaranteed market for a quota amount of their major crops at prices set by the state and the opportunity to sell their quota overproduction and non-quota products to the state at market prices.<sup>18</sup> Before the reforms, the Chinese government was the only legal purchaser of many key commodities, including rice. In the late 1970s, however, the government consistently raised the state procurement price for farmers' commodities while also allowing farmers to trade grain on free markets once they had fulfilled their delivery quotas to the state procurement system.<sup>19</sup> Thus in contrast to many post-communist countries, China opted for a two-track approach, maintaining quotas and set prices for quota production while liberalizing markets for non-quota production and allowing markets to control prices for above-quota production of quota crops.<sup>20</sup>

A study for IFPRI concludes that there is broad consensus that the institutional reform creating the Household Responsibility System (HRS) land reform was the primary factor in the remarkable growth in agricultural output between 1978 and 1984, accounting for 40-60 per cent of that growth.<sup>21</sup> One study found that 49 per cent of this growth derived from the HRS and 46 per cent derived from increases in **inputs** (most importantly fertilizer applications, which were responsible for one third). Another study found that 78 per cent of productivity growth was attributable to the HRS and 22 per cent to **price increases**.<sup>22</sup> According to the FAO, after 1984, the primary engine of agricultural growth was labour-intensive technological change, in particular the use of **modern seed varieties and inputs** such as chemical fertilizers and irrigation. Annual growth in agricultural GDP was around 3-4 per cent and was sustained by public investment in rural infrastructure and in research and technology development.<sup>23</sup>

The gains in production and on-farm efficiency led to an **increase in the rural labour force** available for non-agricultural work in rural areas, a shift that fuelled a rapid process of industrial growth in rural China.<sup>24</sup> By 2000, rural non-farm enterprises – called township and village enterprises (TVEs) - had absorbed a quarter of the rural labour force and were contributing 30 per cent of GDP while farm households derived nearly half their income from non-farm sources.<sup>25</sup> The TVEs were the leading force behind rural economic development in China in the 1980s and 1990s.<sup>26</sup>

Long-standing **government investment** also played a role. Another IFPRI study notes that 'even with the economic reforms that began in the late 1970s it would have been impossible to achieve rapid economic growth and poverty reduction without the past several decades of government investment'.<sup>27</sup> By 1997, spending on rural investment accounted for around 19 per cent of total government expenditures<sup>28</sup> - a figure much higher than in many developing, especially African, countries today. Using provincial level data for 1970-97, the IFPRI study pinpoints government **spending on rural education** as having the largest impact on reducing rural poverty and regional inequality, while **spending on agricultural research and development (ARD)** had the largest impact on agricultural production growth and the second largest impact on poverty reduction.<sup>29</sup> China's ARD system expanded rapidly and by the early 1990s accounted for 18 per cent of developing countries total ARD expenditures.<sup>30</sup> Indeed, policy reforms promoting private investment were accompanied by breakthroughs in rice research which fostered the growth of a vibrant seed industry for hybrid rice; hybrid rice spread quickly and between 1978 and 2008 grew to account for 63 per cent of all land under rice cultivation. Its yield advantages helped China feed an additional 60 million people per year during that period, according to IFPRI.<sup>31</sup> Big investments were also made in **rural infrastructure**, especially roads and, even more, electricity – by 1996, 97 per cent of villages had access to electricity and more than 95 per cent of households had an electrical connection<sup>32</sup> - a further sharp contrast to some of the poorest developing countries today.

Three other features of China's success are important. First, China's central government adopted a permissive attitude towards **local experimentation** and the transmission of the lessons learned from those experiments into state-sponsored research institutions. Some analysts note a 'learning by doing' approach to reform, adopting new measures through experimentation rather than following a predetermined blueprint. Indeed, many of China's reforms were not implemented at the same time across the country, and reform has often been local in nature.<sup>33</sup>

Second, as well as promoting broad policy reforms, China also adopted a **direct approach to reducing poverty**, and formal poverty alleviation programmes were formulated from 1986. The government then pursued a

strategy of 'regional targeting', alleviating poverty by developing regional or local economies. 'This strategy effectively wiped out large-scale poverty by developing poor areas' although it actually brought little benefit to the extremely poor in the poorest areas. After 1996, the government altered its strategy to one of targeting poor households directly in programmes such as food for work schemes.<sup>34</sup>

Third, it should be noted that the **boom in FDI** into China, which began in the 1990s, happened after the bulk of the poverty reduction had occurred. A World Bank study notes that 80 per cent of the FDI into China occurred after 1995 whereas two-thirds of the poverty reduction occurred in the period 1981-87.<sup>35</sup> Similarly, the bulk of trade reforms did not happen in the 1980s when poverty was falling rapidly but occurred later, especially from the mid-1990s in the lead up to China's accession to the WTO. Indeed, a World Bank study notes that 'trade reform had relatively little impact on poverty reduction or inequality'.<sup>36</sup>

# VIETNAM

## Achievements

Vietnam has made massive progress in combating hunger and poverty:

- During 1990 – 2001, Vietnam reduced the prevalence of under-nourishment from 31 to 17 per cent of the population and the number of undernourished people from 21 to 14 million.<sup>37</sup>
- The prevalence of poverty fell from 58 per cent in 1993 to 29 per cent in 2002 and to 16 per cent by 2006.<sup>38</sup>
- Average daily calorie intake rose from 2,149 in 1990 to 2,556 by 2002 and the ratio of under-nourished children fell from around half to around a quarter during 1993-2003.<sup>39</sup>
- During 1989-92, the agriculture sector grew by 3.8 per cent a year and GDP grew by 7 per cent a year during 1993-2000.<sup>40</sup> By 1989 Vietnam had achieved national level food security, notably due to increased production of the staple, rice, and became the world's third largest rice exporter<sup>41</sup>. From 1995 to 2005 GDP per capita grew by 7 per cent a year and per capita income by 6 per cent.<sup>42</sup>

## Reasons for Success

From 1986 to 1993, in particular, Vietnam's *Doi Moi* ('Renovation') reforms fundamentally transformed the agricultural sector. The key reform – 'Resolution 10' of 1988 – de-collectivised agriculture by obliging agricultural cooperatives to contract land to individual farm households for 15 years (for annual crops) and 40 years (for perennial crops). Within a decade after the **land reforms** took hold in 1987, over 10 million households – more than 87 per cent of peasant households – had been allocated rights to use land covering 78 per cent of the country's land area. These reforms encouraged farmers to produce food staples, livestock and high-value crops far more productively and profitably.<sup>43</sup> Farm households were allowed to buy their own capital stock irrespective of the supply available from the cooperatives and thus buy animals, equipment and machinery.<sup>44</sup> The redistribution of agricultural land was the main element behind Vietnam's poverty reduction.<sup>45</sup> The incentives given to farmers to invest were critical. According to an FAO analysis, the major factor in explaining agricultural growth in this period was the dramatic increase in the quality of labour used for agriculture.<sup>46</sup> 'Put simply', the study for the FAO notes, 'people worked harder once they gained security of tenure and the right to make their own production and marketing decisions'.<sup>47</sup> In 1993, further land reform ensued in the form of a Land Law that extended land use rights to 20 years for growing annual crops and 50 years for growing perennials.

### Land reform

In Vietnam, as in China, one reason for success was the egalitarian nature of the land reforms. Land was distributed according to the number of family members, in order to ensure that each household had enough land to meet its subsistence requirements.<sup>48</sup> There were restrictions on the maximum amount of land that could be held by households – 3 hectares for per farm in the Red River Delta and 5 hectares in the Mekong Delta for annual crops, for example.<sup>49</sup> The egalitarian nature of the land reform created a social safety net guaranteeing livelihoods for the rural population.<sup>50</sup> Another important aspect of the reform was the intention to create gender equality in land tenureship with the names of both husband and wife appearing on the land use right certificate.<sup>51</sup>

In the first period of reform, transfers of agricultural land were restricted mostly to members of the local community; in 1993, the exchange, transfer and mortgaging of land use rights was permitted, but still with restrictions on the size of land ownership.<sup>52</sup> Although egalitarian, there were also drawbacks in this approach – tenure was, and is, still only guaranteed for a limited duration, which can have the effect of discouraging

household investment in the land.<sup>53</sup>

As in China, another key element of the reforms was **crop pricing**. During 1987-91 price liberalization was carried out and by 1989, the policy of compulsory government procurement of farm products was eliminated and private traders were allowed to purchase directly from farmers; prices previously set by the state were allowed to be set by producers and customers.<sup>54</sup> However, the major exception was rice, where the government continued to intervene by raising prices if the market price fell below production costs during good harvests; it intervened by purchasing rice at set prices, by specifying a maximum price in certain markets and by accompanying rice export quotas with (until 1998) export taxes.<sup>55</sup> The government also established in 1993 a Price Stabilisation Fund to provide finance for stockholding certain crucial food commodities.<sup>56</sup>

Export quotas on certain agricultural goods such as tea and coffee were gradually abolished after 1991, except on rice again, which quota actually increased. In 1988 tariffs began to replace quantitative restrictions on trade and the government ceased its exclusive control of foreign trade.<sup>57</sup> This, alongside increased production, helped boost **agricultural exports**, which also contributed significantly to Vietnam's economic success. From 1995 to 2004, rice exports doubled, and coffee and rubber exports both trebled.<sup>58</sup> By 1999 still only 4 per cent of rice exports were exported by private enterprises and rice export quotas were dismantled only in 2000, with the government continuing to restrict rice exports when the domestic rice rose.<sup>59</sup> Thus Vietnam only partially and gradually dismantled controls on economic activity and allowed agricultural exports to become a driver of growth.<sup>60</sup>

#### Growth in production and productivity

Average output of cereals per hectare in Vietnam rose from 3.2 tonnes in 1990-94 to 4.4 tonnes in 2000-04.<sup>61</sup> From 1990 to 2004 per capita agricultural production increased 71 per cent and food production rose 64 per cent. Production of the main staple, rice, doubled between the late 1980s and 2004, and the country moved from being a net importer to a net exporter. By 2003, the volume of cereal exports was three times larger than cereal imports.<sup>62</sup>

One study attributes 28 per cent of Vietnam's agricultural growth during 1986-2005 to **fertilizer inputs**, 23 per cent to **labour**, 18 per cent to increased land cultivation and 14 per cent to use of water pumps.<sup>63</sup> A study for the FAO notes that although some agricultural growth is explained by extending the area of agricultural land (which rose by 41 per cent during 1985-2002<sup>64</sup>), 'the major reason for the increase in total agricultural output in the past 20 years has been **increased input usage**', meaning more intensive use of labour, particularly in the application of chemical fertilizers and widespread use of Integrated Pest Management systems. Fertilizer usage per hectare expanded threefold between 1985 and 2002, with the most rapid increase in usage following the 1993 Land Law. The 'more intensive investment in improved soil fertility is clearly related to the reforms enhancing farmers security of tenure over the land'.<sup>65</sup>

A range of other policies were also important. The government provided a range of **input subsidies** during the 1990s. Fertilizer importers had access to subsidised credit and subsidies were also provided for seed imports and seed multiplication. The cost for farmers using water for irrigation was subsidised (along with half the costs of irrigation maintenance and operations), credit was provided at subsidised rates to poorer farmers and farmers were charged for electricity at lower prices than in other sectors.<sup>66</sup> Vietnam also managed to improve the efficiency of fertilizer distribution in the 1980s through increased competition among state-owned enterprises rather than through privatization and liberalization.<sup>67</sup> The Vietnamese government also spent considerably on **agricultural research**, training agricultural technicians and agricultural infrastructure such as upgrading irrigation and drainage systems, and also maintained stocks of rice and maize for food security.<sup>68</sup> Investments in **rural infrastructure** have irrigated over 80 per cent of paddy land, provided electricity to around 70 per cent of communes and roads to over 90 per cent of communes.<sup>69</sup>

It is hard to gauge the contribution of **subsidised credit** to poverty reduction. The reforms involved the promulgation of a range of decrees, such as the 1993 decree concerning credit for extended agricultural and rural development.<sup>70</sup> Access to credit for individual farmers became available in 1991 when the Agricultural

Bank of Vietnam was allowed to lend directly to households.<sup>71</sup> The Vietnam Bank for Social Policies, which was established in 1995, consolidates all governmental programmes that lend to the poor, and provides subsidised credit without requiring formal loan collateral. (Loans sizes have been limited to US\$1,000 for household business purposes).<sup>72</sup> The credit available to farmers quadrupled in the second half of the 1990s. However, most credit was available to the better-off households and formal credit remained limited for many households.<sup>73</sup>

A report for the US Department of Agriculture notes that the early land reforms were complemented by 'government service support in the form of introducing new crop varieties, improving accessibility to extension services and subsidizing the credit system'.<sup>74</sup> Of these factors the report argues that 'during the last decade, most of the agricultural growth was the result of the adoption of new technologies, in particular the **adoption of new crop varieties**.'<sup>75</sup> This is disputed in other studies, however, which note that by 2005, only around 35 per cent of the total rice area was cultivated with high-yielding modern seed varieties.<sup>76</sup>

Productivity growth does not appear to be explained by increasing **mechanisation**. Farming remained highly labour-intensive and mechanisation remained low – by 2001, less than 2 per cent of Vietnamese households had tractors and only 28 per cent had water pumps for irrigation (the most common type of machinery in use in Vietnam).<sup>77</sup> Neither do improved **extension services** appear to have played much of a role in Vietnam's success, according to some studies, although the government did enact a decree in 1993 promoting their development. Extension services were not well-advanced and the cooperatives, which were largely responsible for extension services, frequently had a bureaucratic approach not well-adapted to meet farmers' demands.<sup>78</sup> However, this view is disputed by an FAO analysis, which notes that a proactive agricultural extension policy introduced improved practices for rice production, pest management, horticulture, small-scale irrigation and aquaculture.<sup>79</sup>

Studies also tend to dispute the importance of the level of **government spending**. In 2000, agriculture spending amounted to around 12 per cent of the Vietnamese government's budget<sup>80</sup> - a relatively high level. However, a study for the FAO concludes that 'revival of the household sector was a crucial element in the success of the reforms. The growth effect was achieved, not through increased investment, but through institutional reorganisation that raised the productivity of labour, reduced the costs of restructuring and enabled necessary macroeconomic adjustments (reduction in the budget deficit) without leading to economic collapse'.<sup>81</sup>

Later poverty reduction also resulted from Vietnam's investment in a **nationwide social security system**, which provides financing for health care, pensions and support for the unemployed. Vietnam has a range of social protection programmes providing cash transfers, subsidised access to credit or access to services, which have consolidated and deepened the earlier gains made by changes in agricultural policy.<sup>82</sup> A number of targeted programmes directly benefit poor and vulnerable people, including ethnic minorities in remote parts of the country.<sup>83</sup> The government's National Plan of Action for Nutrition of 1995-2000 – the first national nutrition strategy approved in Vietnam – has contributed to the improvement in people's nutrition.<sup>84</sup> The Hunger Eradication and Poverty Reduction (HEPR) programme, in place since 1992, has also contributed, focusing on infrastructure support for poor communes, health care, credit and agricultural extension.<sup>85</sup>

# GHANA

## Achievements

Ghana has somewhat more quietly (in the eyes of the world) achieved even more progress in reducing hunger than China or Vietnam, by some accounts:

- The proportion of under-nourished people in Ghana fell from 64 to 12 per cent from 1979 to 1998 – the largest fall experienced by any developing country in the past two decades, according to one FAO study.<sup>86</sup> Other figures show that Ghana reduced the proportion of undernourished people from 27 per cent in 1990 to 5 per cent in 2005 - the lowest proportion of any sub-Saharan African state.<sup>87</sup>
- The number of people consuming less than the nutritionally required level declined from 13 million in 1992 (80 per cent of the population) to 4 million in 2004 (less than 20 per cent).<sup>88</sup>
- Poverty (measured as less than \$1 a day) fell from 52 per cent in 1992 to 40 per cent in 1999 and to 28 per cent in 2005 – probably the best record in poverty reduction in Africa in the last 20 years.<sup>89</sup> Urban poverty is just over 10 per cent (less than one third of the rate in 1991) while rural poverty was still around 39 per cent in 2005.<sup>90</sup>
- Food supply per capita has increased from around 1,600 kcal a day to above 2,600 a day today, a level which makes the country largely self-sufficient in staples.<sup>91</sup>

## Reasons for Success

Ghana's success is far less analysed, with less agreement on explanations, than either China or Vietnam. At a basic level, some analysts argue that poverty reduction has been driven mainly by growth in earnings from non-farm sources<sup>92</sup>; others that it is driven by agricultural growth<sup>93</sup>. Agricultural growth has certainly been impressive, averaging above 5 per cent a year over the past 25 years, ranking Ghana among the top five performers in the world.<sup>94</sup>

A report for the FAO notes that most of the reduction in hunger and increase in the dietary energy supply of Ghanaians is explained by an expansion in maize, cassava, yam and plantain production, in turn mainly due to **expansion of cultivated land**, the latter driven by increased market access for farmers to sell their produce.<sup>95</sup> Other studies also suggest that land expansion is the main explanation for increased staple production; arable land in Ghana has more than doubled in size since 1980.<sup>96</sup> There is, however, a dispute over what productivity gains have been made in Ghana; some see these as low and disappointing since Ghana's farmers still make little use of farm inputs<sup>97</sup>; others, such as a study for the US Department of Agriculture, argue that maize yields increased by 36 per cent during 1990-2003 (with production doubling) and that cassava yields grew by 51 per cent (leading to a more than threefold increase in production). In this view, Ghana's increased food production during the 1990s is explained largely by adopting **high yielding varieties** of maize and cassava, the main sources of food for the poor.<sup>98</sup>

Farm production increases have resulted in the emergence of more village-based processing plants, processing cassava for example, and a diversified portfolio of new export crops, especially horticultural exports, which have rapidly expanded, benefitting smallholders, especially those growing pineapples, the most important of such crops. Some export crops are produced by contracted farmers on out-grower schemes; one recent report argues that Ghana offers a good example of how small farmers can be connected successfully with domestic and export markets.<sup>99</sup>

Underpinning these changes has been the **economic reform process** that began in 1983 and which restored incentives to farm production, including devaluation of the cedi (which helped to boost cocoa exports), control of inflation, removal of commodity price controls and partial liberalisation of the cocoa marketing system.

Increased **production and exports of cocoa** explain much of the poverty reduction in Ghana. The proportion of

cocoa farmers in poverty has fallen from 60 per cent in 1991 to 24 per cent in 2005 – a faster decline than the general decrease of 52 to 28 per cent over the same period.<sup>100</sup> Cocoa exports have quadrupled since the mid-1980s due to both area expansion and yield improvements.<sup>101</sup> Devaluation of the cedi in the 1980s made cocoa exports more competitive while the state-run marketing board cut staff levels and introduced competition in internal marketing with licensed buying companies set up to compete with the state-owned buying company. These reforms helped cocoa farmers increase incomes, receiving a higher proportion of the export price.<sup>102</sup> In recent years, growers have also benefitted from an increased global cocoa price. The cocoa sector has only been partially liberalised, however: the government provides fertilizer subsidies and sprays cocoa farms with pesticides free of charge, alongside providing widespread training for cocoa farmers in the safe use of pesticides. Moreover, the government buys farmers' entire cocoa output at a set price, providing them with a guaranteed market. In 2010, for example, the Ghana Cocoa Board purchased 632,000 million tonnes of cocoa and paid farmers a minimum guaranteed price of 70 per cent of the net FOB export price.<sup>103</sup>

Support to cocoa farmers is far greater than that given to Ghana's food crop farmers. The National Food Buffer Stock Company was established in 2010 and purchased and stored in that year just 6,949 MT of rice and 416 MT of maize, for example.<sup>104</sup> Food crop farmers are the poorest people in Ghana, especially in the north of the country. Indeed, the FAO report referred to above notes that food crop farmers have seen only a marginal improvement in their economic welfare.<sup>105</sup> Poverty reduction in Ghana has centred on certain groups, and indeed on certain geographical regions. Dramatic falls in poverty have taken place in urban areas, among private sector formal employees and among export farmers, especially cocoa farmers in the south and central regions.<sup>106</sup>

# BANGLADESH

## Achievements

Bangladesh is not a success story to the same extent as the other three countries considered here, but has still made considerable inroads into hunger:

- Bangladesh has reduced the proportion of undernourished people from 41 per cent in 1995 to 27 per cent in 2005 (although the numbers have decreased only marginally, from 44 to 42 million).<sup>107</sup>
- The percentage of the population living in poverty fell from 51 per cent in 1995 to 40 per cent in 2015.<sup>108</sup> Other figures show a reduction in poverty from 67 to 50 per cent between 1990 and 2008.<sup>109</sup>

There have been significant successes in combating under-nutrition:

- Between 1991 and 2004 – before the recent food price crisis set back years of progress – the proportion of the population below the minimum level of dietary energy consumption fell from 36 to 27 per cent.<sup>110</sup>
- Over the past 15 years Bangladesh has recorded some the world's best progress in reducing underweight rates among children under five. During 1989-2007, the proportion of underweight children has fallen from 66 to 46 per cent and for children with severe stunting from 28 to 16 per cent.<sup>111</sup>
- Infant and maternal mortality has improved significantly, with the under-five mortality rate falling from 106 per 1,000 live births in 1996 to 61 in 2007, and ante-natal care coverage doubling during 1990-2007.<sup>112</sup>

## Reasons for Success

Bangladesh's improvements in food production and food security over the past 15 years are mainly explained by a mix of widespread social protection programmes and improved agricultural performance.

Bangladesh is promoting around 30 **social protection programmes**, involving over a dozen government ministries, within the context of a national food and nutrition policy which aims to ensure food security for all. Social safety nets currently make up around 13 per cent of the national budget.<sup>113</sup> A key programme is the Public Food Distribution System, which provides food or cash-based transfers to poor and vulnerable groups. The Food for Education programme, set up in 1993, transfers food to low income families upon enrolment of their children in primary school, and has been shown to have increased school attendance.<sup>114</sup> These programmes have promoted food security but also suffer from problems; notably, only around 40 per cent of eligible households are covered by any of the programmes and thus they do not reach many of the long-term poor.<sup>115</sup>

As regards agricultural policies, Bangladesh has managed to more than double the **production of cereal grains** since it became independent in 1971.<sup>116</sup> Other policies that have contributed to increased food production and food security include improved farmers' **access to credit**, the provision of **extension services**, **government rice procurement** and **input subsidy programmes**.<sup>117</sup> IFPRI studies notes that increased food productivity in Bangladesh is mainly due to the proliferation of a simple **irrigation** technology – shallow tubewells – together with increased use of **high yielding rice**. The rice, known locally as *boro* rice, amounted to 61 per cent of the country's rice cultivation by 2008 and now feeds around 22 million people; IFPRI argues that it is 'the major factor' behind the country's reduction in poverty by around 1 per cent per year during the 1980s and 1990s.<sup>118</sup> The increasing use of irrigation equipment, such as low-lift power pumps and shallow tubewells, was enabled by the government's liberalisation of imports of such inputs in the 1980s. The land area irrigated rose from 2 million ha in 1988 to 5 million ha in 2009, with shallow tubewells accounting for 85 per cent of the increase.<sup>119</sup>

These seemingly minor reforms, IFPRI argues, stimulated the rapid growth of irrigated dry-season farming, which subsequently grew to account for 90 per cent of the increase in rice production in Bangladesh between 1988 and 2007.<sup>120</sup> The policy changes increased the proportion of farms owning shallow tubewells from 5 per cent in 1988 to 22 per cent in 2007, although most were, and are, in the hands of larger landowners. There are also other major downsides to the expansion of *boro* rice cultivation such as the associated heavy use of chemical pesticides and over-exploitation of groundwater.<sup>121</sup>

The high degree of **civil society involvement** in designing and implementing anti-poverty interventions is a remarkable feature of Bangladesh's recent history.<sup>122</sup> Government and civil society organisations have implemented many interventions designed to help people move out of poverty. The **micro-finance** movement is well recognised as one of the most significant factors contributing to poverty reduction in Bangladesh.<sup>123</sup> The Grameen Bank, which is essentially owned by the poor, has a network of services covering 76,000 villages across the country, with 7 million borrowers, 96 per cent of whom are women.<sup>124</sup> Indeed, most families in rural Bangladesh can now access micro-finance. However, a recent household survey found that only 18 per cent of people cited micro-finance as being the main cause of improvements in their livelihoods – the most important causes cited by villagers derived from small business activities, land assets and livestock.<sup>125</sup> Some other studies suggest that although micro-finance in Bangladesh has helped the poor raise their food consumption and reduce extreme poverty, 'the aggregate poverty reduction effects are not quite substantial to have a large dent on national level aggregate poverty'. To exhibit a stronger impact on poverty reduction, micro-finance schemes would need to go beyond the provision of financial services and help borrowers improve their productivity and income.<sup>126</sup>

## A selection of analyses from the literature

Here is a selection of studies focused on analysing the reasons for success in agriculture and in reducing hunger.

The FAO's report *Pathways to Success: Success Stories in Agricultural Production and Food Security*, analyses Armenia, Brazil, Nigeria and Vietnam, and concludes that certain factors are generally present in all successful countries:

- Creating an enabling environment for economic growth and human well-being
- Reaching out to the most vulnerable and investing in the rural poor
- Protecting gains
- Planning for a sustainable future<sup>127</sup>

IFPRI's 2009 book, *Millions Fed: Proven Successes in Agricultural Development*, which reviews examples of agricultural success around the world, highlights eight factors:

- Sustained investment in agricultural research and development, such as in crop breeding or updating farmers' traditional soil and water management practices. 'The critical role of long-term public investment in science and technology plays out across the entire developing world'.
- Complementary public investments in irrigation, rural road networks, rural education, market infrastructure and regulatory systems. 'Long-term public investment in the building blocks of agricultural development is a necessary condition for success and is evident in each and every success case'.
- Creating 'private incentives' and putting in place policies that encourage farmers to invest in agriculture and ensuring markets provide timely, accurate price signals to private sector actors.
- Partnerships among diverse actors (research institutes, government agencies, private companies)
- Good timing for policies and 'gradual reforms' undertaken on a step by step basis on the basis of calculations on losses and benefits, and with support provided to those affected by the reforms.
- Experimentation at local level, allowing mistakes to be learnt, and pursuing incremental approaches to scaling up. 'Creating space for local experimentation and innovation is a critical means of generating big bangs from incremental changes'.
- Community involvement and grassroots participation, in consultations, policy deliberations, scientific research and experimentation; 'similarly, involving local practices, customs and knowledge in an intervention are the seeds of big success'.
- Leadership, often requiring individual champions to publicly push the issue and to mobilise political or financial capital.<sup>128</sup>

## Successes in Asia

A range of studies show that the Green Revolution in Asia after the 1960s - which successfully increased grain production but had large adverse effects on the environment and inequality - was characterised by heavy government intervention in providing subsidies, building infrastructure and providing guarantees for credits.<sup>129</sup> Improvements in agricultural productivity in Asia were stimulated by government investment in rural infrastructure, agricultural research and extension, irrigation and price incentives. Rice growing was kept profitable through subsidies, virtually free irrigation water, price support and stabilization programmes and well-developed rural infrastructure that ensured low marketing costs.<sup>130</sup> Asian governments used price stabilization as a major policy instrument during the Green Revolution, stabilizing food prices in general and rice prices in particular. 'Pro-poor economic growth and stable rice prices were the recipe for food security in Asia' and most Asian countries increased the level of protection of their rice farmers from the 1970s to the mid-1990s.<sup>131</sup> This policy involved procuring staples on the government account, holding public stocks and distributing public stocks through public distribution systems or in open market operations to consumers.

## Successes in Africa

FAO's recent briefing paper '**Africa's Food Security: Learning From Success**' considers three successful cases of hunger reduction: the NERICA improved rice seed variety; the increased promotion of cassava into a much more important food security crop; and the increasing use of hybrid maize varieties in East and Southern Africa. All three examples are qualified successes only. For example, the study notes that NERICA has resulted in improved rice productivity but that farmers have limited access to it and that 'failure to protect farmers against liberalization and high input costs are likely to dampen the potential benefits that the adoption of new technologies like NERICA can offer'.<sup>132</sup> The study outlines several implications for policy makers:

- Farmers need to be supported by 'improving access to productive inputs such as seed and fertilizer'
- Productivity improvements in rice through NERICA 'can only be maximised where domestic rice markets are protected from cheap rice imports'. This means that 'balancing the need for open rice markets with the demand to build domestic rice capacity should be a priority for governments in the medium-term'. Governments should continue promoting agricultural research and the 'expansion' of extension service provision.
- Nigeria's success in cassava processing was largely the result of a positive relation between the public and private sector 'with the government taking a proactive role in engaging small and large scale processing industries'.<sup>133</sup>

IFPRI's 2010 book **Successes in African Agriculture: Lessons for the Future**, includes case studies of cassava, maize in East and Southern Africa, cotton in West Africa, horticulture exports from East Africa and dairy production in Kenya. It concludes that there are 'two key determinants of outstanding agricultural performance':

- 'Sustained investment in research and development over time', which also requires 'effective extension, input supply and credit systems that enable farmers to access needed inputs such as improved seeds or breeds of animals, planting materials, fertilizers and veterinary medicines'
- favourable market incentives for farmers and agribusiness, which means 'good macro, trade and agricultural sector policies that do not discriminate against agriculture, sufficient infrastructure... and marketing and pricing policies that encourage private trade, storage and processing'.

Where agriculture has performed poorly, either or both of these factors tends to be absent, the study notes. But they also need to come together in a coordinated way – the availability of improved technologies matters little if farmers cannot access key inputs, for example. Thus 'effective public institutions are a prerequisite for coordinating agricultural development strategies'.<sup>134</sup>

Finally, a 2005 literature review by Steve Wiggins of IDS entitled '**Success Stories from African Agriculture: What are the Elements of Success?**', outlines three common features of successful agricultural growth:

- Population density frequently correlates positively with agricultural development (such as in the well-known case of the upper areas of Machakos, Kenya, where fast population growth was accompanied by farmers investing in their land, making the area relatively prosperous)
- Farmers having access to markets comes out strongly as a driver of growth: farmers will not produce a surplus unless they can sell their produce at good prices
- Successful changes within farming systems tend to be marginal and build on the existing structure of farming by households working small holdings on land held under customary tenure systems – rather than being revolutionary. In response to forces of population pressure and market demand, farmers change their cropping systems or make small investments in inputs or irrigation. With only a few exceptions, large-scale public investments in specific agricultural projects often fail, since they try and change too much too quickly and run into obstacles.<sup>135</sup>

## **Major Challenges Remaining**

Major challenges remain in all four countries in addressing hunger. In China, the key challenges include rising income inequalities, major environmental degradation through over-use of chemicals and high levels of under-nutrition, especially among children. In Vietnam, there is also a widening income gap and growing disparities due to geographical or ethnic isolation as well as high rates of malnutrition among children. Around 11 per cent of Vietnamese remain food-poor, with the highest rates of food poverty in the more remote, mountainous areas and in the densely-populated north-central coast region.<sup>136</sup>

Despite Ghana's successes, absolute poverty remains deep and persistent in certain areas of the country, especially the two most northern regions – Upper East and Upper West. The FAO characterizes 1.2 million Ghanaians as undernourished while Ghanaian figures show that 14 per cent of children are underweight and 28 per cent are stunted due to malnutrition.<sup>137</sup> In Bangladesh, poverty remains a massive challenge with more than 50 million people still living in extreme poverty.<sup>138</sup>

# Conclusions, and Challenges to Donors and Southern Governments

No country's experience provides an exact model for another to follow, but certain lessons do flow from recent country successes in reducing hunger. Some of these challenge the current policies of donors and/or Southern governments. We put forward the following key lessons:

## ***Agriculture policy should be based on small farmers***

In China, Vietnam and Ghana, in particular, agricultural success has been based on supporting smallholders, with very small plots of land. In China, progress was made by around 200 million small farmers with an average holding of just 0.65 ha.<sup>139</sup> In Vietnam, the average landholding in 2001 was around 0.46 ha.<sup>140</sup> In Ghana, average landholdings are around 2.3 ha, with 60 per cent of farms smaller than that average.<sup>141</sup>

This lesson is in danger of being lost in some countries, as governments put more faith in, and devote more resources to, large-scale farming, whether in the form of 'farm blocks' or opening up large tracts of land to foreign investors, wrongly seeing them as magic bullets to promote agricultural growth. Country successes demonstrate that small farmers, when provided with incentives and support by government, can help achieve national food security and rapidly reduce hunger.

## ***The state should play a carefully-designed interventionist role***

China and Vietnam, in particular, clearly demonstrate that a strong role for the state is critical in promoting agricultural growth, even and especially under conditions of market liberalisation. Ghana's cocoa industry also demonstrates that an effective mix of state and market roles can help farmers increase incomes and reduce poverty. In Vietnam, the state played a strong balancing role to the market, with the government favouring selective agricultural protectionism and subsidies over widespread liberalisation of food markets, trade and exports.<sup>142</sup> According to Justin Yifu Lin, the World Bank's Chief Economist, 'China and Vietnam did not follow the transitional approach advocated by the prevailing social thought of the 1980s and 1990s'.<sup>143</sup> Neither have free markets in agriculture been fully established in China or Vietnam, even now.<sup>144</sup>

A critical point here, as the World Bank's Martin Ravallion argues, is that 'China did not make the mistake of believing that freer markets called for weakening those [public/state] institutions'.<sup>145</sup> Indeed, China's success illustrates not only that freer markets can serve poor people but also that 'success would not have been possible without strong state institutions implementing supportive policies and public investments'.<sup>146</sup> In addition:

'China's experience points to the importance of combining pragmatic, evidence-based, policy making with capable public institutions and a strong leadership that is committed to poverty reduction. Without these conditions, and the right policies, it is difficult to see how any country can make the significant changes that are needed to get out of an equilibrium in which large number so of poor and powerless people suffer under policies that perpetuate their poverty'.<sup>147</sup>

A key lesson is thus the need for more effective state institutions, especially in Africa, and the need to design the right kind of state intervention policies suited to national circumstances. But currently there are two problems here:

- First, although there is widespread agreement that states should provide public goods by investing in agricultural research, extension services and rural infrastructure, in practice many Southern governments are simply failing to spend sufficiently on these areas. Extension services have collapsed

in many countries, few investments are often made in rural infrastructure and many governments are spending less and less on agricultural research. China's spending on ARD increased threefold over the period 1981-2000 whereas in sub-Saharan Africa the increase was barely 20 per cent.<sup>148</sup>

- The second problem is that other state intervention policies which have often proved successful in the past are largely opposed by donors. Three stand out:

## **Price stabilisation policies should be considered**

Price stabilisation policies are generally criticised by donors as unnecessary interventions in the market and, often for that reason, are currently not pursued by many Southern governments. However, government intervention to stabilise prices - including measures such as price controls and setting minimum prices, buying farmers outputs, buffer stock management, providing direct income support and/or subsidising agricultural insurance along with trade protection - has been a key feature of successful poverty reduction in many states, as we have seen. Many of these policies were also used successfully in other countries in their early stages of development, such as Chile and, indeed, by the now developed countries.<sup>149</sup>

These policies do not always work – as, for example, in India and Zambia where minimum prices for staples hindered diversification into other crops - highlighting the need for carefully designed policies.<sup>150</sup> An IFPRI study analysing lessons from Asian agriculture in the shift from parastatals to private trade concludes based on three decades of experience that:

‘Under certain circumstances, public grain price stabilization can contribute positively to increased agricultural growth and overall economic development. Price stabilization was vital to widespread adoption of new high-yielding wheat and rice varieties and benefited both producers and consumers, leading to increased economic growth and decreased poverty and under-nutrition throughout the region.’

The study notes that there are two pre-conditions for the success of public intervention in grain markets:

- The first is the presence of market failure – throughout Asia in the 1960s, infrastructure was weak and the flow of market information was poor, for example, but there is similar market failure currently in Africa.
- The second pre-condition is that ‘there should be a high level of government commitment in terms of improved incentives, institutions and investments for increasing grain production’, and thus price stabilization is only one part of the package.<sup>151</sup>

## **Radical land reform is needed, must be egalitarian, and the process managed ultimately by the state**

Land reforms clearly provided the initial spur to the success in reducing poverty in China and Vietnam. Countries have vastly different land tenure systems to those previously prevailing in Vietnam and China, but radical land reform remains a key to empowering small farmers in many countries. Land reform amounts to scaling down larger units through a process of subdivision into small, more efficient farm sizes. When these are given to families in secure tenure, there is a significant distribution of wealth and economic opportunity in society. The principle is the same whether one is reforming Latin American *latifundia* or collective farms in communist countries.<sup>152</sup> Yet many Southern governments are simply opposed to far-reaching land reform. Alternatively, donors tend to press for wholesale free markets in land reform programmes. Yet a crucial aspect of the successful land reforms in China and Vietnam, at least in their early phase, was the restrictive role played by the state in limiting the ability to sell land, parcelling out land on an egalitarian basis and imposing an ownership ceiling (a similar ceiling was imposed in land reforms in Japan and South Korea.<sup>153</sup>) Without such a ceiling, land is likely to become concentrated in the hands of the few; indeed, deregulated land markets almost always lead to re-concentration of land ownership.<sup>154</sup>

## **Input and credit subsidy schemes can be vital**

Not only input subsidy schemes – that provide seed and fertilizer to farmers at low prices – but also subsidised credit, have often proved important in raising farmers’ productivity. Some donors have changed their view of input subsidies in recent years from complete opposition to either toleration or limited support (depending on the donor). Subsidised credit, however, which has also been long rejected by donors, is still often opposed by them or at best tolerated. Although there is some acceptance by donors, such as the World Bank, that a government role in lending can sometimes be positive, there is little active championing of this potential policy, with donors seeing credit as a ‘private good’, preferring private banks and markets to lend to poor farmers (which invariably never happens). Thus many governments spend little or nothing helping to ensure that their farmers have access to credit. Ha-Joon Chang of Cambridge University argues that:

‘experiences show that it is crucial for the government to be significantly involved in providing agricultural credit. The simple fact is that without some subsidy elements and/or mandatory lending to small-scale farmers, private sector financial institutions are not going to extend enough credit to them... Subsidized credit does not guarantee agricultural success; however, agricultural success without it is impossible to achieve’.<sup>155</sup>

Chang also argues that another policy that can be crucial to farmers - insurance - ‘is unlikely to work without some government help’. Again, there are successful examples of state-subsidized agricultural insurance in now developed countries and some developing countries, like Chile.<sup>156</sup>

## **Reducing hunger, and economic development, should start with agricultural growth**

Both China and Vietnam began their economic reforms in agriculture and later extended the process to other sectors of their economies.<sup>157</sup> The lessons from Asia are clear in showing that growth in the rural economy has helped the poor – and the overall economy - more than growth in the urban industrial sector.<sup>158</sup> Academic studies of China show that rural economic growth had a far higher impact on poverty than urban economic growth over the period 1981-2004, for example.<sup>159</sup> These experiences reinforce the long standing argument that there is a need to give higher priority to agricultural growth than industrialisation in the early stages of economic development, and only when agricultural output has risen sufficiently will it be possible to release labour from agriculture for the infant non-farm sectors.<sup>160</sup> According to the FAO’s analysis of lessons from Asia, ‘economic development begins with the development of agriculture’ given the numbers involved in agriculture and its contribution to GDP.<sup>161</sup> This lesson is, however, largely lost on many governments currently, which are failing to invest sufficiently in agriculture, and continuing policies of ‘urban bias’.

## **... but this does not mean that the future is always in farming**

Although growth must start in agriculture, this is not to say that people should remain farmers. Rural non-farm enterprises played a leading role in eradicating poverty in China in the first phase of the reforms. Both in China and in Vietnam, the result has been a decline in the number of rural families whose primary income derives from agriculture – in Vietnam from 73 per cent in the late 1980s to 53 per cent by 2001.<sup>162</sup> Indeed, an FAO study of Vietnam’s success concludes that ‘the kind of measures needed to stimulate growth in agriculture will involve an increase in the rate of people leaving the sector’ since regions that have a high percentage of non-farm waged labour also tend to have higher rates of poverty reduction (although, it should also be noted that not all waged labour is poverty reducing).<sup>163</sup>

## **Gradual, pragmatic – and not ideological - reforms, together with earning**

## **from experimentation, are more likely to succeed**

China, as well as Vietnam, rejected the 'big bang' approach to economic reforms and opted instead for a more gradual approach to institutional change. As noted in the sections above, China adopted a 'learning by doing' approach that involved considerable experimentation at local level; according to the FAO, 'gradualism was successful as a reform strategy' in Vietnam with the reform process 'cautiously implemented'.<sup>164</sup> Justin Yifu Lin wrote in 2007 that 'pragmatism is the most important policy guidance for economic transition... A gradual, piecemeal approach to reform and transition – designed diagnostically and pragmatically according to reality – could enable the country to achieve stability and dynamic growth simultaneously and allow the country to complete its transition to a market economy'.<sup>165</sup>

## **Social protection policies can be critical**

Social protection policies, as we have seen in Bangladesh, Vietnam and China – and also more notably in Brazil - have also played important roles in reaching the hungry, and often in consolidating earlier gains made in agricultural policy. If this is an obvious point, it is worth recalling that many governments spend little or nothing on social protection; indeed, only around 20 per cent of the world's population currently has access to formal social protection.<sup>166</sup>

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