ELLA
Evidence and lessons from Latin America

Brazil's policy package – using market mechanisms and no-regrets policies that address the diversity of farmers' needs – offers an interesting policy model for addressing climate change adaptation in semi-arid regions.

BRAZIL'S PUBLIC POLICY PACKAGE FOR SUCCESSFUL FARMER ADAPTATION

SUMMARY

Community-based adaptation (CBA) is a fairly new approach where Farmers in Latin America's semi-arid regions often suffer from badly designed, underfunded or discontinuous policies which limit their livelihood options and make them more vulnerable in the context of climate change. Brazil's policy package offers an interesting approach for helping farmers in semi-arid regions adapt to climate variability. In particular, it offers a cohesive mix of individual policies that together address the variety of farmers' needs, integrating rural development concerns with future adaptation requirements. No-regrets policies focus on market incentives and integration, helping farmers become more self-reliant, while also reducing the need for government expenditure, and is thus of particular interest where budgets are tight. This brief describes the individual policies that make up Brazil's policy approach along with their common features, and offers lessons learned that may be useful for policymakers in othercountries.

LACK OF PROGRESS, LACK OF INTEGRATION: DEVELOPMENT AND ADAPTATION POLICIES FOR FAMILY FARMERS

Historically, farmers have suffered from ill-designed, underfunded and discontinuous policies in Brazil's semi-arid regions. Early policy interventions focused on large-scale technological options that focused only on water, such as dams or reservoirs. These have done little to spur rural development or reduce farmer vulnerability to climate impacts: 30% of the rural population in the Brazilian Northeast are extremely poor, the highest percentage of any region in the country;[1] the 1979-83 drought affected 18 million people and cost approximately US$1.8 billion in disaster response.[2]

Semi-arid areas in South Asia and Africa often face similar challenges. Government policies to help farmers and local communities adapt to climate change are limited, and often do not offer a coherent package of livelihood options that address the variety of farmer needs while being appropriately tailored to local contexts.

[1] Silveira, F. G. et al. 2007. *Dimensão, Magnitude e Localização das Populações Pobres no Brasil (Dimensions, Magnitude and Location of Poor Populations in Brazil)*. Texto para Discussão 1278. IPEA, Brasília.
[2] Lemos, M.C. 2007. *Drought Governance and Adaptive Capacity in North East Brazil: A Case Study of Ceará*. Human Development Report Office Occasional Paper 2007/50. UNDP.

'No-regrets' policies generate social benefits under any future climate change scenario. Though they may be unequivocally positive, they still have real costs and are not automatically effective, equitable or efficient. Cost-benefit analysis may help identify alternatives with more efficient, effective and equitable results.

Source: Heltberg, R., Siegel, P. B., Jorgensen, S. L., 2009. Addressing Human Vulnerability to Climate Change: Toward a 'No-regrets' Approach. *Global Environmental Change* 19, 89–99.

BRAZIL'S PUBLIC POLICY APPROACH

Adaptation or Rural Development Policies?

Finding inexpensive yet effective ways to help farmers adapt to climate change is indispensable. But what do these policies look like? In Brazil, as in other Latin American countries, there are few policies that are specifically labelled 'adaptation', but good sustainable rural development may also be considered successful adaptation. Coping with adversity and change is not limited to climate risks, but includes strengthening local institutions, providing access to credit and markets and cash transfers for the extremely poor.[3]

It helps to think "backwards" to see what good adaptation should not be:

(1) It definitely should not *reduce incentives to adapt*. This could be the case where cash transfers are given without counterpart funds from farmers.

(2) It should not have *high opportunity costs*: in this case governments may waste considerable resources which could be put to better use elsewhere.

(3) Big infrastructure projects often *create path dependency*, situations that are difficult to change. But climate change and impacts are as yet uncertain, so keeping flexibility in adaptation may be important.

(4) Adaptation projects should avoid *GHG emissions* wherever possible because they are the reason why adaptation is necessary. This is not to deny development or carbon rights to farmers, but agro-ecology and low-carbon agriculture can provide ample opportunities for rural development and adaptation.

(5) Of course, actions must not disproportionately burden the most vulnerable.

Taken together, these five characteristics are known as mal-adaptation. Considering them together in policy lifecycles does not necessarily make good adaptation or rural development policymaking easy, but does help address the complexity of this issue.

Source: Barnett, J., O'Niell, S., 2010. Maladaptation. Global Environmental Change 20, 211–213.

The Policies

This section presents a selection of the five most representative Brazilian policies to improve farmers' adaptive capacity, and their characteristics, impacts and challenges are discussed. The second section analyses the common features of Brazil's policy package: reinforcing and complementary policies that use market mechanisms, integrate diverse actors, and address diverse farmer needs, expanding beyond just water access to look at livelihoods and overall development.

Brazil's conditional cash transfer **Family Fund Programme** (*Bolsa Família*) provides small but relevant income transfers of R$22 (US$13) per child per month to families in poverty. Poverty for the programme is classified as per capita income less than R$140 (US$83) per month, while extreme poverty is per capita income less than R$70 (US$41) per month. For the latter, transfers are unconditional, and families also receive an additional Basic Benefit of R$68 (US$40) a month. Otherwise, transfers are conditional on regular medical visits and school attendance.

Bolsa Família is extremely relevant for reducing vulnerability in rural regions, as 50.8% of beneficiaries live in the Brazilian northeast. In times of drought, this income can be used to cope with harvest losses.

The **National Programme for Strengthening Family Agriculture *(Programa Nacional de Fortalecimento da Agricultura Familiar*** - PRONAF***)*** is Brazil's microfinance programme for smallholder farmers. Small-scale finance is made available with preferential interest rates and little bureaucracy. Different credit lines are incorporated to address the variety of beneficiaries' needs. Loans can be used for ongoing costs and investments.

So far, R$1.37 billion (US$875 million) worth of credit has been disseminated in the Brazilian northeast (20% of PRONAF resources), benefitting over 670 thousand families, 70% of which have an annual income of below the Brazilian minimum wage of R$6,000 (US$ 3,831).

[3] Obermaier, M, 2011. *Old and New Dilemmas in the Sertões: Climate Change, Vulnerability and Adaptation in the Brazilian Semi-arid*. PhD dissertation. Federal University of Rio de Janeiro.

Brazil's **National Biodiesel Programme *(Programa Nacional de Produção e Uso de Biodiesel* -** PNPB***)*** has a social inclusion strategy with a focus on semi-arid farmers. The idea is simple: farmers plant and sell biodiesel feedstock of castor and sunflower via contracts to biodiesel producers. These in turn provide certified seeds, technical assistance and guaranteed market access and prices.

Farmers participating in the biodiesel programme benefit from higher prices. Evidence suggests that incomes have increased by 16-20%, rising to an average of R$345 (US$204) per hectare, additional to other existing incomes from on- and off-farm activities.[4]

The ***Food Acquisition Programme (Programa de Aquisição de Alimentos*** - PAA***)*** buys subsistence products such as rice, cassava, flour and beans directly from farmers. These purchases go without competitive bidding processes and are limited to maximum values per farmer per year. The programme has five modalities:

(1) Direct purchase of food products from farmer cooperatives or associations at reference prices: R$8,000 (US$4,828) farmer/year

(2) Purchase for simultaneous donation to restaurants, public hospitals or school canteens. Local food security thus becomes a truly local issue: limited to R$4,500 (US$2,660) farmer/year

(3) Formation of food stocks in farmer organisations: limited to R$8,000 (US$4,828) farmer/year

(4) Incentives for milk production, preventing malnutrition and food insecurity through acquisition and distribution of milk at guaranteed prices: R$4,000 (US$2,364) farmer/semester

(5) School feeding programmes, organised by the local city councils: limited to R$ 9,000 (US$5,319) farmer/year

Recent evidence shows that 53.9% of PAA resources go to the Brazilian Northeast, where food insecurity affects 53.6% of the population, the highest percentage in Brazil.[5] Milk production is particularly well received, with PAA milk production being mostly limited to the semi-arid Northeast. Beneficiaries' income may have increased up to a factor of three. Increases in cultivated land, diversification, use of inputs like seeds, fertilisers, pesticides and tractors, and greater quality control have been observed.

Harvest Guarantee (*Garantia Safra*) is a crop insurance programme for the typical crops grown by family farmers in Brazil's semi-arid regions. Farmers who lose over 50% of their harvest due to droughts or excessive floods receive compensation. This is payable in up to six instalments and claims made are subject to inspection by local technicians. The policy is linked to the microfinance programme PRONAF, as only those farmers who take out a loan are eligible.

Farmer contributions account for around 1% of the insurable value, which equates to approximately R$5 (US$3) per year. When compensation is paid out, it tends to be about R$250 (US$143) per month. The programme benefitted 639,000 families during the 2009-2010 harvest. For 2011, some 734,000 farmers are enrolled. Care needs to be taken that Harvest Guarantee does not become the baseline case under increasing climate change impacts: agricultural losses in times of drought are frequent even today, and there is a real risk that the program can become the rule, rather than the exception.

Common Characteristics of Brazil's Policy Package

Focus on no-regrets options: these generate guaranteed benefits regardless of future developments in climate change. For example, access to microfinance motivates farmers to invest in their productive systems or in water security. PNPB focuses on dissemination and use of drought-resistant crops, market channels, technical assistance and guaranteed prices for farmers. PAA acts in a similar vein, creating commercialisation possibilities and reducing potentially harmful competition with agribusiness. The crop insurance programme explicitly addresses climatic risks. Together, the policies form a package that has room for livelihood concerns and climate risk management, both of which are essential for adapting successfully to future climate change.

Use market mechanisms, but not excessively: all programmes rely on farmers making economic choices

[4] Zapata, C., Vasquez-Brust, D., Plaza-Úbeda, J. 2010. *Productive Inclusion of Smallholder Farmers in Brazil's Biodiesel Value Chain: Programme Design, Institutional Incentives and Stakeholder Constraints*. Working Paper 73. International Policy Centre for Inclusive Growth (IPC)/UNDP, Brasília.
[5] Grisa, C. et al. 2009. *O Programa de Aquisição de Alimentos (PAA) em Perspectiva: Apontamentos e Questões para o Debate*. Working Paper. OPPA/UFRRJ/ Action Aid, Rio de Janeiro.

and taking real risks. This helps farmers become more self-reliant and also motivate themselves with income possibilities. However, semi-arid small farmers are also the most vulnerable. Therefore, instruments such as preferential interest rates, guaranteed sales markets and minimum prices are used to protect farmers from unrestricted markets.

Focus policies on diverse actors: this means integration of stakeholders. The policies do not only target individual farmers, but also strengthen cooperatives and farmer associations. The PNPB, for example, strongly relies on cooperatives as farmer representatives in dialogue with biodiesel producers. For the PAA, associations participate in building food stocks. For PRONAF, cooperatives are now essential in mediation between smallholder farmers and banks. This helps in the formation of markets and makes communities more resilient to climate change through strengthening relationships.

Aim for a stable policy environment but allow for flexibility: even where policies did not succeed at first, time was given to disseminate the main ideas and let farmers get to know the programmes. This is important: smallholder farmers have much to lose. In the cases of PNPB and PAA, farmer participation remained low during the first years, but then increased significantly; currently 55,000 farmers (PNPB) and 22,366 (PAA, without milk production) participate.

Continuity does not mean that strategies cannot be adapted when things go wrong. Virtually all policies have undergone important changes overtime. In the case of PNPB, better prices for farmers have been set and the productive chain has been reorganised in order to protect farmers from market volatility and regain their confidence following a chaotic beginning.

Combine a variety of policies that complement and reinforce each other: no policy exists in a vacuum, and each interacts with the others to achieve maximum impact. For example, PRONAF created special credit lines for biodiesel farmers and for constructing cisterns. The crop insurance programme is part of PRONAF. PAA was created within Brazil's No Hunger programme (*Fome Zero*). They re-enforce each other geographically as well, since some policies are national (PRONAF, PAA, PNPB) and some are exclusively for the semi-arid Northeast (PAA milk production, Harvest Guarantee). This ensures that the variety of farmers' needs are met, while leveraging resources spent on one policy with those of another, thereby adding greater value for the same amount of spending.

The Challenges

No policy presented is without faults. Small farmers have difficulty obtaining credit where credit failure is high, and 70% of farmers in the Northeast are currently behind with their repayments.[6] Agricultural productivity remains low even where there are technical assistance and certified seeds (PNPB). Technical assistance and knowledge assimilation progress slowly, and technology use remains limited. Losses due to droughts are significant (Harvest Guarantee). And finally, how to reach the most vulnerable is still an open question, with Bolsa Família being the exception. In other words, efficiency, efficacy and equity in practice are extremely difficult to implement beyond their pure application as guiding principles.

Most policies could fare better but they show that adaptation in semi-arid regions goes beyond 'simple' water issues. Some policies may not be best practices on their own, but have interesting components that can be replicated. This, for example, includes market access mechanisms or links between programme activities and technical assistance, which can have considerable impacts on rural economies and livelihood options, and thus also climate change adaptation in the long-run.

[6] Guanziroli, C. E., Basco, C.A. 2010. Construction of Agrarian Policies in Brazil: The Case of the National Programme to Strengthen Family Farming (PRONAF). COMUNIICA 5 44-63.

CONTEXTUAL FACTORS

FACTORS ENABLING SUCCESS IN BRAZIL'S POLICY PACKAGE

Large-scale technologies and top-down policy management characterise decades of unsuccessful approaches to strengthen rural livelihoods. This paradigm has given way to a vision of development which is based on strengthening rural livelihoods and coexistence of rural populations with the semi-arid region. It is based on support for conservation and sustainable land use practices, land tenure reforms and the use of appropriate technologies that contribute to this coexistence.

This new paradigm is promoted by NGOs, community associations, worker unions, churches and research institutes. Many are organised under the umbrella of the civil society association Articulation in the Semi-arid (Articulação no Semi-Árido - ASA). ASA has become a force that successfully influences policy-design, as the government is increasingly adopting the discourse of coexistence into policy-making.

Political will and support for the 'northeastern (semi-arid) cause' has also been essential. The presence of politicians from the northeast in leading positions of the government led to higher government transfers, for example to finance water works in the case of severe droughts. Two federal-level ministries have been created since 1999 to directly address the consequences of poverty, specifically including the semi-arid region. The ruling Worker's Party (PT) government, in power since 2003, has extensively advocated for northeastern causes and implemented or extended prior government initiatives, as well as several of the development policies described above.

Capacity to implement change and learning from positive examples has been essential: the market access mechanism of PNPB has inspired the PAA acquisition strategy (in fact, both were born under the same technical staff).

Finally, the policies have used creatively ways to strengthen local institutions. PRONAF legitimised and strengthened rural farmer unions by requiring that unions provide farmers with Declaration of Aptitude, or proof of being a family farmer, to avoid misuse of public funds, in order to be eligible. PRONAF thus created a justification for rural farmer unions, and they have now become a substantive force promoting improvements in semi-arid public policies. For example, in the case of the biodiesel programme, farmer unions successfully lobbied for integrating minimum prices into the contracts between smallholder farmers and biodiesel producers. Other policies show similar examples; PNPB has been responsible for forming bottom-up cooperatives that use programme revenues to diversify their productive activities.

LESSONS LEARNED

1. The policies presented show how adaptation in semi-arid regions requires an integrated strategy that goes beyond 'simple' water issues. A variety of policies is necessary because there is neither one semi-arid nor one typical family farmer; interest and vulnerability vary considerably, even within Brazil's semi-arid region. Reinforcing and complementing policies can be a successful strategy.
2. Market incentives can motivate farmers and make them more self-reliant while reducing pressures on tight government budgets. However, semi-arid farmers are among the most vulnerable, so safeguards must be in place.
3. Relying on broad stakeholder integration proved important for addressing climate change adaptation.
4. A stable but flexible policy environment may be particularly beneficial for integration of knowledge and participation of farmers.

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