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SYNERGIES OF NATURE, WEALTH, AND POWER

LESSONS FROM USAID NATURAL RESOURCE MANAGEMENT INVESTMENTS IN SENEGAL

EXECUTIVE SUMMARY





JUNE 2014

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COVER PHOTO

TOP LEFT: Conservation farming group president Babacar Sisé stands before his garden parcel.

TOP RIGHT: Sacks of baobab fruit piled in a remote village outside of Bala. Market linkages enabled rural communities to enter the value chain for this local product.

CENTER: Baobab silhouettes.

BOTTOM LEFT: Doudou Diamé in front of the laden garlands of his oyster farm.

BOTTOM RIGHT: Members of Dindefelo women's group GIE Fouta sit among their stores of *fonio* and powdered baobab, hopeful there will be buyers next market day.

PHOTOGRAPHY

All photographs used in this report were taken and edited by Lindsay Dozoretz.

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DISCLAIMER

This project was made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of a Participatory Agency Partnership Agreement No. AEG-T-00-07-00003-00 between USAID and the USDA Forest Service International Programs. The authors' views expressed in this publication do not necessarily reflect the views of USAID or the United States Government.

EXECUTIVE SUMMARY

Senegal has a rich history of environment and natural resource management (NRM) programs implemented by the U.S. Agency for International Development (USAID) over the past 40 years. However, until about ten years ago, these programs were limited in their long-term impact on biodiversity conservation, environmental protection, poverty reduction, and local empowerment.

In 2003, USAID-Senegal initiated the Wula Nafaa project—its name meaning "value of the forest' in the Mandinka language—which departed from traditional NRM projects by integrating tools to increase the productivity of natural resources by empowering local people and identifying and improving value chains. The project's design and implementation deliberately followed the principles and recommendations of USAID's seminal Nature, Wealth and Power (NWP) framework (USAID, 2002). The framework, a distillation of lessons learned and best practices, described and advocated for a tripartite approach to NRM development, balancing economic growth with governance gains and natural resource conservation.

Over the past 10 years, Wula Nafaa's integrated approach—premised on the need to integrate biophysical, economic, and governance dimensions of natural-resource-based rural development—has led to dramatic broad-based poverty reduction in villages in the targeted regions of Senegal. In addition to helping resolve technical and productivity issues in natural resource management, the program addressed natural resource-based value-chain and market dynamics and promoted local control and decision making over forests and other natural resources.

Rural communities that participated in Wula Nafaa, which previously lagged behind comparable communities, have now surpassed their counterparts on many economic and social indicators. A measurably higher increase in wealth for Wula Nafaa areas was shown in an impact evaluation using Demographic and Health Surveys (DHS) data in a side-by-side comparison of Wula Nafaa project areas with non-intervention areas. The onset of the program corresponded with a turnaround and accelerated growth, broad-based improvement in well-being, and poverty reduction in the program areas.

Project communities reversed a long-term trend: whereas Wula Nafaa areas had previously been in decline, post-project numbers showed that they had surpassed comparison communities. Accompanying the rise in overall prosperity were affiliated impacts on health, nutrition, education, employment status, and significant improvements for women. The indicators measured change in durable assets, and observed long-term impacts in education, employment, health, and nutrition, suggesting that changes brought about by Wula Nafaa's integrated NWP approach are structural and self-perpetuating.

This study presents the results of the economic impact analysis along with analysis and information from which these conclusions were derived.

OVERVIEW OF THE RETROSPECTIVE STUDY

With the completion of the Wula Nafaa project, USAID-Senegal and its partners concluded a ten-year program of integrated natural resource management with wealth creation and good governance components—a successful demonstration of the relevance and effectiveness of the NWP development paradigm. With a range of successful applications in different ecological and cultural contexts, a significant and measurable impact on income generation at the household level, and an impressive net return on development investment, the USAID Wula Nafaa program contains many valuable lessons for implementation of integrated NRM programs in Senegal as well as for improving NRM and catalyzing sustainable rural development around the globe.

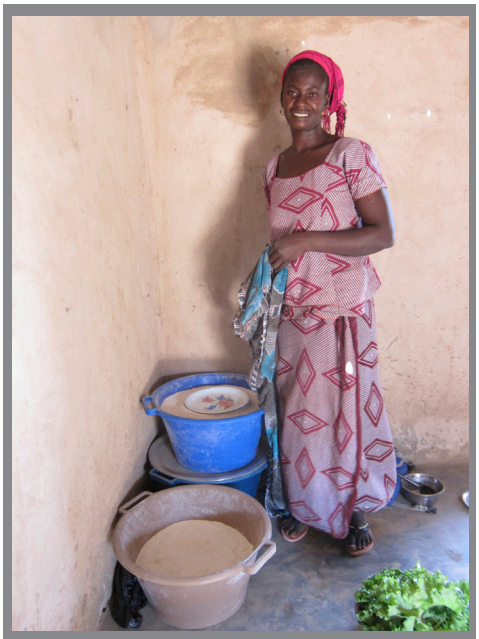
This retrospective study "tells the story" of the historical context and evolution of USAID's long-term commitment to sustainable development in Senegal through NRM program assistance. The study is designed to contribute to a greater appreciation of the achievements and impacts of USAID investments in environment and natural resource management projects, and to contribute to USAID's institutional memory in this area. It aims to capitalize on key

lessons learned from these projects and to provide guidance to increase the effectiveness of interventions aimed at addressing poverty alleviation, economic growth, environmental governance and climate change adaptation as well as improved natural resource management, biodiversity conservation, and related sustainable development objectives.

This study focuses on the last ten years of NRM programming in Senegal, which centered around the Nature, Wealth and Power paradigm implemented via the Wula Nafaa program. In viewing Senegal as a case study of ten years of the NWP approach in action, this document examines what has been achieved and explores programmatic complexities to provide recommendations for future initiatives.

IMPACT EVALUATION: EVIDENCE OF WULA NAFAA'S EFFECT ON POVERTY REDUCTION

While it has been argued that an integrated approach like NWP is necessary for long-term sustainable natural resource management (USAID, 2002), this report provides robust quantitative evidence that integrated NRM programming can also deliver significant results in poverty reduction. The application of NWP principles in Senegal illustrates how an integrated approach can stimulate rural wealth creation without degrading the natural resource base. The evidence also affirms that decentralized, community-driven approaches may be more appropriate for long-term development than centrally managed government approaches.



Neene Sylla proudly displays baobab powder that she will sell through the community women's federation of Dindefelo.

A statistically rigorous analysis of comparative wealth generation in project versus non-project areas revealed that applying NWP principles via Wula Nafaa resulted in proportionately better progress in target areas. The study used a unique form of impact evaluation— a quasi-experimental design— to analyze data from Senegal's demographic and health surveys. The quasi-experimental design methodology compares changes over time for the treatment group (population living in Wula Nafaa program areas) and the control group (a similar population living outside Wula Nafaa program areas).

The results lend empirical support to the conclusion that Wula Nafaa has delivered a crucial impetus to poverty alleviation in the program areas through physical asset growth and human capital accumulation. After trailing other communities before Wula Nafaa was initiated, the Wula Nafaa program communities outpaced the control areas in durable asset ownership and material comfort. They also outperformed the control areas in employment, education and nutrition status.

The poorest segments of the population and women were the primary beneficiaries of Wula Nafaa achievements, with positive effects on socioeconomic equality. Equality in employment opportunities between the poorest and richest quintiles was, on balance, more prevalent in the Wula Nafaa rural communities than in the control group, as was equality in education status. The benefits of Wula Nafaa narrowed the gender gap and generated significant employment security for both men and women, but the benefits to women were more substantial. Finally, overall nutrition status was higher in the Wula Nafaa areas than in the control areas, according to an examination of four widely used nutrition indicators.

This study demonstrates that the NWP approach can reverse the decline of rural communities. Importantly, this powerful quantitative evidence is coupled with evidence of perceptual change among beneficiaries at the village level, an indication of grassroots buy-in, which is a necessity for long-term structural change.

From charcoal forests to baobab groves, from primate conservation to anti-salinization efforts, from conservation farming to fisheries to mangroves, the Wula Nafaa project demonstrated the diverse applicability of the NWP paradigm in a variety of ecological and cultural settings, and within a range of biophysical and economic contexts. Although much work remains, application to this multitude of contexts succeeded in terms of proven poverty reduction, and an impressive return on development investment.

The impact evaluation shows empirically that Wula Nafaa had a positive impact across the board, and the design of the data analysis allows these impacts to be directly attributable to the project. A major outcome and lesson for other countries—Sahelian, African, and beyond—is that systematic application of NWP principles is a successful way to reverse the declining socioeconomic status of rural villages and to create accelerated growth in place of economic decline, while simultaneously empowering local people and enacting measures to protect the natural resource base for future generations.

The waterfall at Dindefelo, an ecotourism site in southeastern Senegal and home to endangered chimpanzees. Project assistance has helped establish a community reserve for combined conservation and village-based enterprise.

By virtue of its support for natural-resource-based enterprises, improved local governance, and a policy shift toward more sustainable use and improved management of the resource base, Wula Nafaa clearly had a positive, measurable, and multifaceted impact on the socioeconomic status of the communities it served, reversing worrisome trends, and influencing broad-based quantifiers of human well-being.

LOOKING RETROSPECTIVELY AT 30 YEARS OF USAID NRM INVESTMENTS

Looking retrospectively at the past several decades, USAID NRM-based aid has evolved from being directed at disaster mitigation and urgent environmental catastrophes—drought, famine, desertification in the 70s, and 80s—to the current attention to long-term, sustainable, integrated solutions to the converging crisis of poverty, natural resource depletion, food insecurity, political instability, and climate change. In Senegal, this progression was particularly evident as programs shifted from dune stabilization and tree-planting in response to drought and the onset of desertification to programs addressing the emergent issues of climate change, loss of arable soils, and salinization and their links to rural poverty, poor health, food insecurity and political instability.

Whereas other USAID missions adopted a narrower program focus (such as Madagascar where NRM programs were focused on biodiversity conservation), in Senegal the program objectives in environment, natural resources, forestry, and sustainable agriculture/food security were deliberately integrated. Table 1 shows a timeline of projects over USAID's tenure in Senegal.

Table 1: USAID/Senegal NRM programming, 1979-2013

Time Period	Programmatic Focus	Main USAID Investments
1970s-80s	Focus on desertification control and fuelwood	• Fuelwood Production Project (PARFOB), 1979-1982 • Renewable Energy Accelerated Impact Project, 1980-82
1970s, 80s, 90s	Sand dune stabilization and reforestation	• P.L. 480 Title III (Food for Work) (1981-84) • Senegal Reforestation Project (SRP), 1987-1995
1992-1998	Knowledge, Attitudes and Practice (KAP) Surveys	• Conducted in 1992, 1994, 1996, and 1998
1991-1998	Integration of Agriculture and NRM	• Natural Resource Based Agricultural Research, NRBAR, 1991-1998 • Kaolack Agricultural Enterprise Development, KAED, 1992-1997
1993-2003	Community Based Natural Resource Management (CBNRM)	• Projet de Gestion Communautaire des Ressources Naturelles (PGCRN), 1993-2003
1999-2004	Integration of Enterprise Development and Decentralization with NRM	• DynaEnterprises, 1999-2004 • Decentralization and Local Governance, (DGL-Felo), 2000-2004
2000-2002	Emergence and Articulation of the Nature-Wealth-Power paradigm	• "Nature, Wealth, Power: Emerging Best Practice for Revitalizing Rural Africa", 2002
2003-2013	An Integrated Approach to NRM	• Wula Nafaa Phase 1, 2003-08 • Wula Nafaa Phase 2, 2008-13
Post-Wula Nafaa programming	Continuation of selected aspects of Wula Nafaa approach in Food Security and Nutrition and Economic Growth programs	• The Feed the Future (FTF) "Yaajeende" project • Collaborative Management for a Sustainable Fisheries Future (COMFISH) • Economic Growth Project (PCE), 2005-2015

USAID projects and programs over the past 40 years have addressed a wide range of problems. Mistakes have been recognized and corrected; for example, USAID-Senegal no longer invests heavily in fuelwood plantations, woodlots, or roadside tree planting. Senegal is still challenged by deforestation, environmental degradation, and food security, while emerging issues include resilience in the face of climate change. Visions of slowing desertification through reforestation and the establishment of "greenbelts" have shifted to include measures aimed at scaling up community based forest management, sustainable landscape management and agroforestry in farming systems by promoting farmer-managed natural regeneration (FMNR) and climate-smart agriculture.

The evolution of USAID's environment and natural resource investments is positive. In the past decade, assessments have underscored both the value and contribution of "environmental income" (or income derived directly from renewable natural resources) and the continued pressures on the resource base. Although more progress is needed, indicators show that the rural poor in USAID-assisted areas are securing a greater share of environmental income and are having a greater voice in land-use planning and decentralized NRM, which should eventually slow degradation and boost the productivity of natural resources.

WULA NAFAA: TEN YEARS OF IMPLEMENTATION OF THE NWP PARADIGM—IMPACTS AND OUTCOMES

Lessons from past projects throughout the evolution of several decades of USAID NRM investment in Senegal crystallized in the ambitious Wula Nafaa project. It was designed to slow deforestation and reduce rural poverty by developing small enterprises based on natural resources and nontraditional agriculture. In the first phase, it assessed progress in terms of increased local incomes, improved environmental governance, and an increased role of communities in managing forests. As the program evolved, more attention was given to boosting agricultural production through conservation farming and to conserving biodiversity by establishing community reserves and

promoting ecotourism. The project included activities to improve rural water supplies, including anti-salinization measures, and addressed community management of marine resources in fisheries and mangrove ecosystems. Relatively modest efforts were aimed at identifying policy reforms and developing a framework for monitoring and evaluating the impact of the program.

Wula Nafaa had major impacts nationwide, assisting in the establishment of long-term community-based NRM strategies in an impressive variety of contexts: from degraded forests to seasonal floodplains, from mangrove systems to chimpanzee habitat, from fisheries to farmland. Ten years of project implementation resulted in improved management of over 130,000 hectares of forest, the elaboration of local conventions—plans for community land use—in 20 rural communities, and a greater overall increase in rural wealth in project areas versus non-project areas. Conservation farming techniques more than doubled rainfed grain production, and greater access for rural producers' to charcoal markets has contributed to a six-fold increase in their incomes. Overall calculations show Wula Nafaa helped create more than 15,000 full-time jobs—including more than 5,000 for women. More than 1,700 village enterprises generated more than $41 million in revenues in the last five years, an enviable return on an investment of $22.5 million, according to USAID (USAID-Senegal, 2013b).

Project impact indicators showed that "over 40,000 people have sustainably increased their incomes by $36 million through the management and conservation of natural resources, an additional 10,000 tons of primary foods and grains have been produced by rural enterprises, and over 9,900 families have increased their production of key agricultural products" (USAID-Senegal, 2013b). The Wula Nafaa team noted that these impacts were accomplished in association with "improved, transparent and responsive local governance by local authorities, local community organizations and small businesses" (USAID-Senegal, 2013a).

During Wula Nafaa's first phase, from 2003–08, it reportedly increased incomes by 80 percent for more than 4,000 enterprise groups engaged in the production and marketing of products with 11 market chains in 32 rural communities. As of late 2012, during its second phase, 31,000 people (42 percent of whom were women) benefitted from 2,169 training events (USAID/Wula Nafaa, 2012). Over the life of the project, through the formal adoption of 20 local conventions, progress was made in establishing the conditions for the improved management of natural resources across a 2.6 million hectare area (International Resources Group, 2008).

The Wula Nafaa approach, which integrated interventions in governance and enterprise development with improved natural resources management, has increased the volume and value of products generated and marketed through natural resource-based enterprises. The project achieved a major breakthrough in enabling community organizations and local producers to produce and market charcoal; 25 percent of the charcoal consumed in Senegal is now produced more sustainably from community-managed forests. During its second phase, the Wula Nafaa project supported conservation farming by 10,000 farmers, resulting in increased crop yields and more resilient agricultural production.

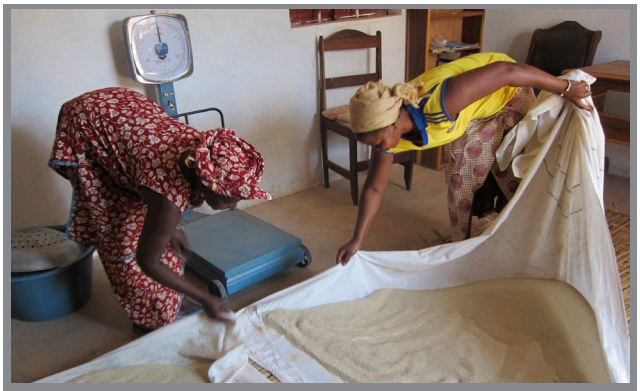
Departing from the sectoral approach of NRM programs, Wula Nafaa used an integrated approach combining assistance with improved governance, enterprise development, and NRM through support for the following activities and tools:

- Use of community facilitators
- Strengthening and training of producer and NRM groups
- Identification of targeted value chains
- Technical support to Rural Councils, CBOs, and the Forest Service
- Participatory land use tools (i.e. local conventions, forest management plans)
- Enterprise development in association with ecotourism and conservation
- Assistance with major infrastructure development linked to sustainable intensification of agricultural production

Prior to Wula Nafaa, the common approach for NRM projects was to fund the operation of nurseries and small tree plantations, and assist with technical preparation of land-use and management plans, detailed natural resource

inventories, strengthening of central government and its technical services, and support for guards for the Forest Service and Park Service. However, governments often failed to enforce many national laws and regulations, or to implement forest management beyond the life of a project because of deficiencies in funding, staff, or institutional and community support.

Rigorous monitoring of environmental change may be needed to understand the actual impact of Wula Nafaa on the condition of natural resources. But the past decade indicates that rural communities can be mobilized to change their behaviors and will actively pursue a pathway toward more sustainable use and management of forests, fisheries, and other natural resources upon which they depend for their livelihoods and well-being when their rights are clarified and when they recognize how they stand to benefit from improved management.



A women's *fonio* producers group preparing their harvest for sale.

Sacks of baobab fruit piled in a remote village outside of Bala. Market linkages enabled rural communities to enter the value chain for this local product.

CHARCOAL THROUGH THE LENS OF NWP

Charcoal production is one of the profitable activities associated with community-based forest management at many Wula Nafaa project sites. Historically, charcoal production, together with livestock grazing and the conversation of forest to cropland, were viewed as the biggest threats to Senegal's forest resources. The Government of Senegal often pointed to woodcutting for fuel as a primary source of forest degradation. Thus, it was wary that the decentralization laws of 1996 would allow communities to degrade forests by overharvesting trees for fuelwood. At the time, Senegal's charcoal business was an oligopolistic market dominated by a cartel of politically well-connected businessmen who captured the lion's share of profits (Ribot, 1999). Prior efforts to "reform" the charcoal business and to increase economic benefits for communities while giving them a greater voice in decisions about forest management, and charcoal production and marketing were largely unsuccessful.

Successfully addressing the charcoal situation was the crux of the Nature-Wealth-Power challenge in Senegal. It called for intervening in the delicate balance among avoiding the degradation of a valuable natural resource, taking advantage of economic opportunity, and navigating charged political dynamics. The unceasing demand of Senegal's urban populations for an inexpensive fuel source combined with the exploitation of community forests for fuelwood extraction called for an urgent response to strike a balance without causing fuel shortages in the cities or the destruction of community forests.

In the community of Sare Bidji, sustainable charcoal production and increased local marketing was the entry point for an integrated natural resource management strategy through the Wula Nafaa project. The story of Sare Bidji is detailed in this report. When the Wula Nafaa project helped to break the monopoly of the charcoal cartel in 2010–11, local charcoal producers were able to earn twice as much per bag of charcoal. As more areas were brought under community-based forest management, more local producers became involved in charcoal production. Overall, incomes from the sale of charcoal produced in Wula Nafaa areas rose from 68.6 million fCFA in 2009–10 to 386.7 million fCFA ($860,000) in 2010–11.[1]

1 Pers. comm. John Heermans, Wula Nafaa Chief of Party

Despite this huge increase in income, there were a few negatives. The economic boost favored participating households, not all community members, thus increasing overall inequality. Forest management plans designed to promote natural regeneration of areas harvested for charcoal and increased yields of wood fuels may not be sufficient to conserve biodiversity. And while the project helped rural councils exercise their authority, there is still pushback by the Senegalese Forest Service that prevents full decentralization.

Senegal's Decentralization Law of 1996 and the 1998 Forestry Code officially shifted authority over forests away from the State and gave communities jurisdiction over their local forest resources. However, the Senegalese Forest Service retains significant power in forest management decisions. A 2012 assessment of the implementation of Senegal's Forest Management Plan found that the Forest Service still has extensive authority over management of forests legally under the responsibility of Rural Communities.

Economically, charcoal merchants and urban wholesalers maintain their power within the commodity chain; the Forest Service continues to adopt regulations and practices that limit local producers' profits and are inconsistent with decentralization laws; and within rural communes, elites control positions that manage local production. In terms of governance, local elected councils, legally in charge of forest management, are still not able to exercise their authority over charcoal production in their forests or to respond to their constituents' requests to increase production or access to lucrative urban markets.

While the formal adoption of forest management plans may help stem the outright conversion of forests to farmland or other uses, they may fall short of attaining forest management objectives. Research suggests that current charcoal production contributes to a loss of biodiversity and that forest management efforts must be strengthened to deal more effectively with uncontrolled grazing, wild fires, illegal cutting, and rotation cycles that are too short for adequate regeneration of harvested areas (Wurster, 2010).

The case of the community of Sare Bidji provides a poignant example of the interaction of all these elements: producer groups benefited from secondary income derived from the charcoal trade and yet local income inequalities increased; local elected officials are learning to exercise their powers and yet central government and state technical services still hold sway; and while forest management plans were enacted successfully, the desired beneficial impacts on ecosystems over time are still precarious.

REFINING THE VISION FOR INTEGRATED NRM PROGRAMMING

The case of Senegal shows impressive impacts on wealth generation via the integrated NWP approach, and significant inroads in decentralized governance mechanisms and sustainable resource management schemes. However, barriers remain to effective natural resource management practices that achieve the stated Nature-Wealth-Power objectives of sustainable natural resource management and increased productivity, as well as environmental rehabilitation and recovery. The following recommendations are meant to address shortcomings in the application of the NWP approach to guide future programming.

Mallal Diallo, president of a village charcoal enterprise, stands in a regenerated section of forest.

Charcoal producers in Sare Bidji prepare their kiln in the community forest.

RECOMMENDATIONS

1. Continue integrated support for enhancing the contribution of forests and other resources to rural development using the NWP framework
    a. Consolidate achievements and continue with interventions to ensure that the rural poor benefit from "environmental income" while improving management of natural resources and environmental governance
    b. Streamline approaches to support community-based forest management by empowering rural producers as the primary stakeholders; investing in additional needed reforms of Forest Service policies and regulations; enabling more effective local enforcement of rules, and facilitating the implementation of simplified, performance-based management plans
2. Focus on recovery and restoration of ecosystems as well as their productivity as exploitable natural capital
    a. Equip rural communities to protect ecosystems from overexploitation by providing for regeneration and countering ecosystem degradation as aspects of sustainable use and improved management, increasing resource productivity and enhancing the flow of natural resource-based incomes
    b. Scale up farmer-managed natural regeneration and related climate-smart agriculture practices across agricultural landscapes, working with grassroots farmer-innovators and addressing knowledge gaps
3. Increase the attention to agroforestry, livestock and wildlife management
    a. Scale up agroforestry and conservation farming, re-assess the focus and intervention strategies of USAID's Feed the Future program, and give more priority to climate-resilient farming practices
    b. Address the role of livestock production in the degradation of forests; capitalize on the economic importance of pasture resources in forest management
    c. Expand support for community-based management of wildlife and nature reserves; increase community benefits from game hunting and ecotourism, with attention to needed policy and institutional reforms
4. Reinforce environmental monitoring
    a. Expand monitoring of ecosystem health and natural resource conditions and trends; improve monitoring to assess changes in forest conditions over time at the level of ecosystems and ecosystem services
    b. Encourage relatively low-cost, participatory monitoring of changes in resource conditions to inform adaptive management
    c. Track local innovations that improve natural resources management; make use of remote sensing, local knowledge and other evidence to re-examine the major drivers of nonsustainable natural resource use and degradation
5. Shift monitoring and evaluation focus to combine performance monitoring with impact evaluation
    a. Include impact evaluations in future monitoring and evaluation frameworks to assess whether achievements are legitimately attributable to project interventions
    b. Use Demographic and Health Surveys as a source of relevant data of unparalleled depth
6. Strengthen partnerships and networks
    a. Include as a project objective the development of a cadre of well-trained facilitators who can support community-based organizations engaged in sustainable landscape management activities through national nongovernmental organizations and the private sector
    b. Continue to invest in training, capacity building, and knowledge management
    c. Establish a locally accessible clearing house for information on the lessons learned from Wula Nafaa and prior USAID natural resource management investments and related efforts using the NWP framework
    d. Support public-private partnerships and collaboration with the private sector

7. Institutionalize rural participation in national policy engagement

   a. Help form federations of elected local authorities; enable public forums to discuss national policies that affect rural populations; improve rural access to grievance mechanisms such as courts

   b. Replicate successful institution-building programs such as the USAID-funded Democracy and Local Governance project (DGL-Felo) that train rural councils to know their rights as local representatives and the channels by which they can defend, exercise, and expand those rights; train rural populations on their rights and on the roles and powers of their elected representatives

   c. Support the diffusion of information on laws and regulations in local languages; and train rural councilors (in their local language) on their roles, rights, and responsibilities

8. Leverage decentralization to transfer powers to local communities and help build their capacity

   a. Encourage governments to devolve rights (not just transfer obligations) to local communities and decentralized management bodies, and provide support to these entities to meet agreed upon performance standards for improved management

   b. Support a transition of the Forest Service's role from that of command and control to one of overseeing the devolution of resource rights and strengthening decentralized resource management bodies

   c. Support efforts for fiscal decentralization, both legally and through local financing via collection of the rural tax and other revenue generation efforts

9. Adopt a minimal environmental standards approach

   a. Create management and use standards that specify the ecological conditions that must be maintained if production or use is to be allowed.

   b. Manage forests for the needs and aspirations of rural populations.

10. Move away from donor dependency

   a. Promote measures for long-term sustainable financing of natural resource interventions via price differentiation and fiscal policies that support improved management.

   b. Build capacity for innovation and creative problem solving to enable local development of solutions that are not directed by donors.

UNDERSTANDING HOW CHANGE HAPPENS

The clear success of the USAID Wula Nafaa project—as demonstrated by its broad-based impacts on governance, natural resources, economic growth, and improved rural living conditions—has shown that poverty alleviation can be achieved through integrated natural resource management programs. By understanding how change happens and what inhibits progress in revitalizing rural landscapes, we can design future initiatives to more effectively generate impacts that are positive, lasting, and transformative.

The approach and tools of Wula Nafaa and the USAID NRM projects that preceded it in Senegal suggest a number of best practices in NWP project design and implementation that are generalizable to any context, regardless of resource allotments, local governance structures, or level of poverty. The best practices for Nature advance a long-term model for sustainable resource management that is community driven and promotes overall ecosystem health and resource protection. The best practices for Power support decentralized management, local ownership of resource-based decisions, and transfer of competence and authority to community leadership. The best practices for Wealth encourage growth of community enterprises, promote diversification of incomes, and endorse greater organization and opportunity to develop sustainable livelihoods.

Factors inhibiting change include institutional resistance to effective power sharing. A review of the experience and lessons from USAID-Senegal's investments in environment and natural resource projects shows that many achievements occurred despite the focus of the central administration on other priorities and approaches. For decades,

the priority of the Forest Service and Ministry of Environment was to support reforestation and government-directed forest management, including costly and donor-dependent approaches to fire control, forest inventory, and forest management planning.

The Ministry of Environment wanted to maintain its control over significant revenue flows linked to charcoal production, hunting, and exploitation of timber and non-timber forest products. The Ministries and departments dealing with governance and decentralization were largely focused on provisions for elections and "deconcentration" rather than true devolution of authority and empowerment of producer groups engaged in managing natural resources. In considering the organization and priorities of the national government of Senegal, it became clear that an integrated approach designed to address the root causes of poverty and ecosystem degradation was liable to run against the grain of most central government policies and programs.

Senegal's decentralization reforms of 1996 and 1998 opened the door for integrated development based on the Nature-Wealth-Power paradigm. These reforms allowed rural communities to become legitimate development partners. Indeed, in Senegal, the idea of "good enough governance" (Grindle, 2004, 2007)—the "minimal conditions of governance necessary to allow political and economic development to occur"—is very appropriate. Without decentralization laws, the achievements of Environment/Natural Resource programming and Wula Nafaa may not have been possible. Legal decentralization paved the way for further community empowerment and capacity building, and handed over the power and jurisdiction over natural resources to communities.

In Wula Nafaa, programmatic emphases on local conventions (a mechanism of participatory local governance), strengthening local organizations, and breaking up value-chain cartels allowed its project areas to achieve a higher level of "good enough governance" than other areas, allowing for significant improvements and measurable change.

However, the axiom that "governance achievement can also be reversed," is a caution appropriate to Senegal's current situation. Despite legal recognition of decentralization, the central government has not relinquished habitual controls, nor have local representatives had the confidence and capacity to effectively take the reins. Though great gains have been made in transitioning to effective decentralization, the fledgling governance innovations are at risk. They need to be expanded and additional support provided to local communities to back the innovations.

Persistent institutional barriers should not diminish the positive achievements of NRM programs in Senegal. They are discussed to highlight the nuances of context and the process of change as the impacts of recent interventions ripple through the country. Conflict is a necessary part of change, and will occur as power and management authority is redistributed. Although engrained vested interests may resist change, successes reveal a trend of community pushback and the rural voice is only getting stronger. Battles are no longer being fought exclusively by the donor community, but by the forest users and other community groups as well.

A delicate balance between central economic control and management powers devolved to local governments—or *nested decentralization*—is a successful model for effective NRM on a national scale. In Senegal, movement toward this model is part of the enabling condition for integrated NRM program success. But it can also be a barrier if the State retains too much control and does not hand over enough power to local government. That said, Wula Nafaa outcomes have shown that the Nature, Wealth and Power approach can help to achieve greater success in achieving development objectives when governance is "good enough".

CONCLUSION

The integrated strategy of Nature Wealth and Power approach has strength and resilience. As demonstrated in the Wula Nafaa project in Senegal from 2003-13, the NWP approach can achieve overall success in reducing poverty, while making strides in facilitating "good enough governance" and improving local management of natural resources. It can be applied in a variety of contexts, engaging diverse types of resources.

Wula Nafaa's integrated programming allowed villages that were worse off than comparison villages to become better off, not just in terms of poverty reduction but including positive impacts in gender, education, health and inequality. These results show that NWP is a successful strategy for reversing the decline of rural communities by encouraging local wealth generation and sustainable management of natural resources.

It is clear that decentralized, intensive, community-managed approaches can lead to comparatively greater long-term development gains. This retrospective study shows that improvement of rural livelihoods, local empowerment in governance, and sustainability of the resource base are interrelated and have synergistic outcomes.

Wula Nafaa's NWP program presents a model for poverty reduction via an integrated natural resource management approach, and demonstrates how positive change can result from working simultaneously from both the top and bottom: for example, policy change and shifting industry norms at the top paired with perceptual change and empowerment in the community. This is how paradigms shift, how conventional wisdom is challenged and overturned, and how a pathway toward sustainability begins to be revealed.

Development investors should look to the Nature, Wealth and Power approach as a model of a tested implementation framework for improved resource management and community empowerment with a significant, tangible impact on reducing poverty.

Doudou Diamé of Medina Sangako shows cement bricks made of oyster shells, a byproduct of oyster farming in the village mangroves.

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