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Taking stock of the National Greening Program six years hence

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The National Greening Program (NGP) is a priority initiative of the Aquino administration that targets poverty reduction, promotion of food security, environmental stability and biodiversity conservation, and enhancement of climate change mitigation and adaptation. With a total budget of PHP 31 billion, it seeks to plant 1.5 billion seedlings in 1.5 million hectares of land nationwide from 2011 to 2016 (Calderon 2016).

Throughout its six-year implementation, the NGP has undergone several assessments done by the Commission on Audit (COA) through its Annual Audit Reports (AARs) and by state think tank Philippine Institute for Development Studies (PIDS) through its NGP Impact Evaluation Project. The Forest Management Bureau (FMB) of the Department of Environment and Natural Resources (DENR) has also provided regular reports on the progress and performance of the program.

This *Policy Note* reviews the performance of the NGP from 2011 to November 30, 2016 (latest available data) and discusses the results of the aforementioned analyses of the program conducted by the COA and PIDS. It aims to provide the government and other stakeholders a summary of the performance of the NGP and the issues and problems encountered during its implementation. This *Note* also proposes policy recommendations that have special significance given the government's decision to extend the program to 2028.[1]

[1] On November 12, 2015, former President Benigno S. Aquino III signed Executive Order 193, which created the Expanded National Greening Program that aims to reforest "all remaining unproductive, denuded, and degraded forestlands" from 2016 to 2028.

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Performance of the NGP, 2011–2016

Area and seedlings planted

So far, the NGP has planted 1,344,553,383 seedlings of various tree species in 1,637,439 hectares of open, denuded, and degraded forestlands (Table 1). This means that, overall, the program has already exceeded its target area at 113 percent, while falling short in its target seedling planted at 90 percent. Even if the program eventually will not be able to attain its goal in terms of seedlings planted,[2] it was asserted that it has already equaled or even surpassed what the Philippine government had accomplished in reforestation in the previous 50 years (Calderon 2016).

In terms of target area planted, the NGP achieved its best performance in 2011, when it posted a 129-percent rate (Table 1). Meanwhile, it was in 2015 that the program performed best in planting seedlings, with a 117-percent rate. From January to November 30, 2016, the program posted a 105-percent achievement rate in terms of area planted. Meanwhile, it surpassed its annual target for seedlings planted at 130 percent.

Survival rate

While the program targets to have an annual survival rate of 85 percent, the actual figures have remained below it. From 2011 to 2015, for instance, the annual survival rate nationally had been 83 percent except in 2015 when the program registered a survival rate of 82 percent (Table 2).

Meanwhile, the average annual survival rates vary per region. Among them, Regions 13 and 3 posted the highest (90%) and the lowest rates (46%), respectively. Aside from Region 3, the National Capital Region (NCR) and Regions 1, 4B, 5, and 7 did not achieve the desired 85-percent survival rate. Nonetheless, more regions posted 85 percent or higher.

Employment generated

As of November 30, 2016, the program has generated approximately 3.3 million jobs and employed 462,066 persons in upland and rural communities (Table 3). Both figures had increased from 2011 to 2014 but decreased in 2015. The data also revealed that the employment performance of the NGP may have significantly decreased in 2016 relative to its performance in the past years.

Forest area gain

Using data for the 2010–2015 period, the Food and Agriculture Organization ranked the Philippines fifth among the countries worldwide with the most annual forest gain, with 240,000 hectares, representing a 3.5-percent annual increase in forest area (Table 4) (FAO 2015). According to Calderon (2016), this increase resulted from the implementation of the NGP and the intensified forest protection in the country.

[2] According to Calderon (personal communications), the actual budget for the NGP in 2016 was reduced from PHP 10 billion to PHP 8 billion. This constraint partly reduced the ability of the program to plant more seedlings in order to make up for the shortfalls in previous years.

Analysis of the NGP

COA Annual Audit Reports

While the foregoing presented a positive performance of the NGP, the AARs of the COA have identified various problems encountered during its implementation. Among the salient issues reported in its earlier years was poor program monitoring, which centered only on the number of hectares and seedlings planted (Israel and Arbo 2015). The low survival rates also became an issue in many areas that posted far below the desired survival rate of 85 percent.

Table 1. Annual hectares and seedlings planted of the National Greening Program (as of November 30, 2016)

Year	Target Area (hectares)	Area Planted (hectares)	Percent of Target	Target Number of Seedlings	Number of Seedlings Planted	Percent of Target
2011	100,000	128,558	129	100,000,000	89,624,121	90
2012	200,000	221,763	111	200,000,000	125,596,730	63
2013	300,000	333,160	111	300,000,000	182,548,862	61
2014	300,000	334,302	111	300,000,000	205,414,639	68
2015	300,000	360,357	120	300,000,000	351,014,239	117
2016*	247,683	259,299	105	300,000,000	390,354,792	130
Total	1,447,683	1,637,439	113	1,500,000,000	1,344,553,383	90

Source: Data gathered from NGP files

Table 2. Survival rates of NGP plantations, 2011–2015

Region	Survival Rate (in percentage)*					
	2011	2012	2013	2014	2015	Average
National	83	83	83	83	82	83
NCR	80	80	59	88	91	73
CAR	89	89	89	87	89	88
1	70	69	81	84	87	82
2	87	87	87	89	92	89
3	74	76	42	38	37	46
4A	87	87	88	89	88	88
4B	85	86	88	79	81	83
5	74	77	79	79	80	78
6	87	87	87	87	88	87
7	58	103	66	86	85	80
8	85	85	89	90	77	86
9	90	89	89	88	78	85
10	87	87	88	87	88	88
11	89	91	92	83	91	89
12	86	87	86	87	88	87
13	81	82	89	95	91	90

* The survival rates are computed based on formula developed by NGP. The average figures are not computed based on simple averages.
CAR – Cordillera Administrative Region
Source: Data gathered from NGP files

The COA recommended that the NGP should designate personnel to conduct regular inspection of the sites to ensure that remedial actions are undertaken and the desired survival rate is attained. Moreover, Ranada (2014) urged the government to partner with a credible nongovernment organization to make an independent status report of the NGP. The group, according to her, should visit each site and report whether the seedlings actually grew to maturity, or were damaged by storms or as a result of lack of maintenance.

For 2015, COA (2016) observed the following issues on the implementation of the NGP in certain regions and areas: (a) inability of the program to meet the desired survival rate on planted seedlings in Region 1 for 2013 and

Table 3. Number of jobs generated and persons employed by NGP, 2011–November 30, 2016

Year	Performance Indicator	
	Jobs Generated	Persons Employed
2011	335,078	47,868
2012	380,696	55,146
2013	466,990	65,198
2014	1,079,792	152,008
2015	915,729	123,519
2016*	114,889	18,327
Total	3,293,174	462,066

* Data are the same as those for June 2016 because NGP hires every six months.
Source of data: Calderon (2016)

Table 4. Countries reporting the greatest annual forest area gain, 2010–2015

	Annual Forest Gain ('000 hectares/year)	Annual Forest Gain (%)
1. China	1,542	0.8
2. Australia	308	0.2
3. Chile	301	1.9
4. USA	275	0.1
5. Philippines	240	3.5
6. Gabon	200	0.9
7. Lao PDR	189	1.1
8. India	178	0.3
9. Viet Nam	129	0.9
10. France	113	0.7

Source of data: FAO (2015)

2014 and in Region VI for 2014 and 2015; (b) inadequate monitoring on the implementation of the Clonal Nursery and Production of Quality Planting Materials of Premium and Indigenous Forest Species and establishment of Coffee Plantation in the Municipality of Piddig, Ilocos Norte; and (c) nonturnover to the DENR of excess/unplanted seedlings for replanting in 2016 in Zambales.

To address the aforementioned issues, COA urged the concerned regions to properly utilize their NGP personnel for the proper monitoring and implementation of the program. The agency also urged them to adopt strategies to ensure the attainment of the desired survival rate for seedling plantation. Moreover, COA proposed the conduct of periodic reviews on the progress of projects in the different regions. Related to this is the development of a catch-up plan to address delay in the implementation of the Coffee Plantation Project for Region I and the turnover of the excess seedlings to DENR.

Over time, the NGP has initiated measures to improve its monitoring component (Calderon 2016). These include the following: (a) mapping of all program sites using the latest technology and the validation on the ground by the field offices; (b) annual geotagging of sites with Global Positioning System coordinates, date, and time; (c) use of individual map codes that are in accordance with the Philippine Standard Geographic Codes; (d) provision of a Certificate of Site Development duly signed by concerned DENR officials; and (e) submission of validated reports that field personnel should certify under oath. The NGP coded maps and geotagged pictures, in particular, can be viewed on the NGP website.

PIDS' impact evaluation

In 2015, PIDS conducted an impact evaluation of the NGP, which has four components: economic, social, environmental,

and institutional. Below is a summary of findings of the individual components of the evaluation:[3]

Economic component

- Generally, the surveyed affected households have been grateful for the NGP. Seventy-four percent of households in NGP sites revealed there had been significant increases in their incomes; 44 percent mentioned their household assets have increased; 60 percent said their capability to send their children to school has improved; 76 percent mentioned the availability of food has increased; and 52 percent said their capacity to participate in community activities has improved due to the conduct of NGP in their areas.

- Simulations indicated that relative to the baseline (business-as-usual scenario), the NGP will result in favorable and increasing output effects in the economy. There will be a 0.3-percent increase in output in 2020, 1 percent in 2030, and 2.5 percent in 2050. The highest output growth effect will be in the forestry sector, which will reach as high as 5.5 percent in 2050.

- Relative to the baseline, the NGP will potentially result in favorable and increasing household income effects. The income effects are progressive, with the lowest decile having real household income improvement of 1.4 percent in 2030 and 3.3 percent in 2050, while the highest decile having positive real income effects of 1.2 percent in 2030 and 3.0 percent in 2050.

- Relative to the baseline, overall poverty incidence will potentially decline at an increasing rate. There will be a 2.7-percent decrease in poverty incidence in 2030 and 6.34 percent in 2050. Furthermore, among poor households, those in extreme poverty will see higher improvement in living conditions compared to other population groups.

The above results of the simulations, therefore, indicate that if the NGP is implemented efficiently and effectively and as planned, there is great probability the expected outcomes of the program will be attained.

Social component

- Perceptions of the communities covered by the NGP about the program have been generally positive. There has been a high level of awareness on the positive effect of the NGP, particularly in maintaining ecological integrity of forests.

- Conflicts sometimes occur in some NGP areas that have led to division and friction between members of involved people's organizations (POs). Some of the conflicts result from lack of capacity of officers of POs in financial management, record keeping, and proper reporting.

- There were reported delays in payments to the POs. The delays forced POs to take loans

[3] The final reports of the PIDS Impact Evaluation Project are available as discussion papers on the PIDS website (www.pids.gov.ph).

with varying interest rates, which can be as high as 15 percent every 15 days to pay for the services of their members involved in the NGP.

Environmental component

- The measured survival rates in the covered areas are high and consistent with the government-reported survival rates. The weighted average of survival rates of the covered NGP sites is 85.96 percent. This is significantly higher compared to rates in non-NGP reforestation sites, which is 65.91 percent on average.

- If the survival rates will remain high and plants are protected, the target 12-percent increase in forest cover and 8-percent increase in carbon sequestration can be achieved by 2016, among others.

- There are observed positive effects of the NGP on the environment. On-site measurements show that temperature is lower by 2.72 degrees Celsius in the NGP sites compared to the temperature in bare areas. Communities also observe an increase in stream flow in some NGP areas.

- The design and tree species used by the NGP are not always appropriate to the sites. In particular, the spacing, types, and mix of timber species planted are the same in most sites. Most species planted are soft wood that have low economic value as timber. These fast-growing species may have been intended to help the POs earn money in the shortest possible time and address their income and poverty concerns. However, on the environmental side, these species may be of less help as they are shallow rooted and vulnerable to landslides.

Institutional component

- The NGP has become very target oriented in terms of hectares planted. There is the perception among those involved in the program that the NGP's job is limited to planting the required hectare coverage and less on the attainment of the other program targets.

- There is a general perception that the program's targets in hectares planted are unrealistic and rigid.

- Allegations of corruption against the DENR and PO leaders create conflict within the community organization. Examples of corruption include the use of names of POs in contracts that they have not entered into and padding of the list of beneficiaries where people were listed even though they were not involved in the NGP at all.

As a response to potential corruption, the NGP is now implementing the checkless transaction (advice to debit account) as a fund disbursement system wherein the money

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is remitted directly to the account of the POs (Calderon 2016). This shows that good governance and latest technologies are being utilized to ensure that every money put into the program is used wisely.

Conclusion

At this point, there is little debate whether reforestation is needed to restore the former glory of the Philippine forest. To this end, the NGP has been implemented. However, the program's success can only be known in time when its impact on the problems of poverty, food insecurity, and natural resource depletion and environmental degradation can be measured with more accuracy. Today, while the jury is still out on the NGP, taking effective steps to improve its implementation will go a long way to ensure its success.

For the Duterte administration, perhaps a broader NGP-related policy that tackles the role of the national government in forest resource management should be considered (Bonita 2013). While addressing this issue is beyond the scope of this paper, an informed consideration of this matter by the current dispensation is beneficial.

Suggested policy reforms

Given the government's decision to extend the NGP and sustain the gains of the program, the PIDS Impact Evaluation Project recommends the following policies and actions:

- The national government should review the design of the NGP, in terms of individual species and mix of tree species planted, tree spacing, and other important technical parameters. Furthermore, the DENR should identify and include highly vulnerable areas in the site mapping and planning and then match species and spacing with the sites.

- There should be a scientific review of the formula for the computation of the survival rate and add other important technical parameters used in monitoring (Balangue 2016). The parameters should be recorded accurately both at the local and national levels on a consistent basis.

- The NGP should provide additional socioeconomic incentives for communities to protect and sustain the plantations in the long run. The incentives should benefit not only the primary stakeholders and participating POs but also the secondary stakeholders and the other affected local population groups. Incentives can be in the form of harvesting rights; livelihood support (e.g., marketing and product development support, capacity building and organization development support); mechanisms for long-term financing, such as payments for ecosystem services schemes; and addressing tenure issues.

- The NGP should allocate adequate funds for the overall organizational development and capacity building of the POs. This would help reduce organizational conflicts and limitations that can significantly undermine the gains of the NGP.

- The national government should strengthen the capacity of DENR personnel and POs to monitor corruption in NGP activities. For one, the implementation of an effective reward system for those who report illegal practices should be considered.

- The national government should strengthen the capacity of DENR to effectively carry out reforestation and rehabilitation efforts. In the current setup, DENR hires NGP coordinators and extension officers as contractuals and, in a sense, ad hoc. This is a double-edged sword. On one hand, they are not invested with the missions and mandates of the entire DENR and FMB bureaucracies. On the other hand, their lack of security of tenure can be used to compel them to meet the targets.

- The national government should place the ultimate responsibility for all reforestation initiatives on the FMB. Thus, its conversion to a bureau should be seriously studied. Alternatively, the creation of a new agency tasked only with reforestation, possibly answering directly to the president, should be considered.

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