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POLICY BRIEF

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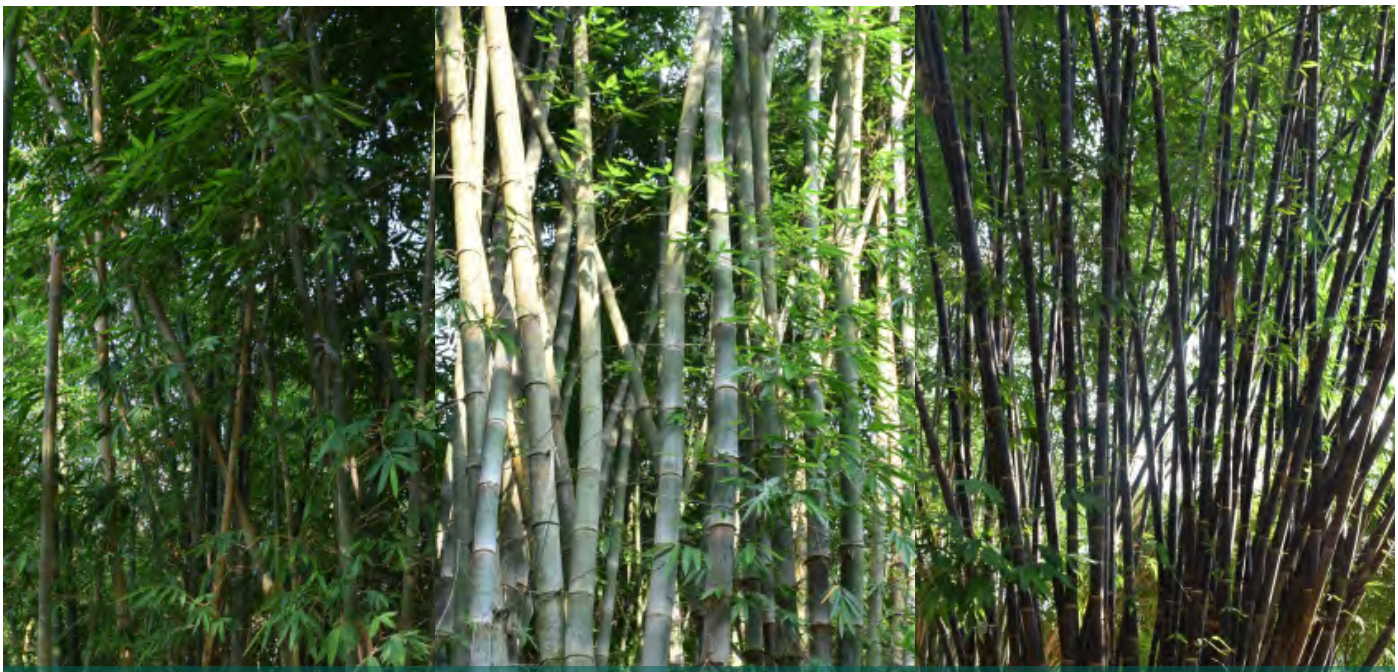

Towards a Simplified and Better-informed Regulatory System for the Bamboo Industry

Bamboo is a versatile, fast-growing plant that outmatches most tree species in terms of utility. It is a substitute for endangered rainforest hardwoods and a raw material for furniture, handicrafts, buildings, and bridges. Certain species and parts of bamboo can be used as medicine, food, clothing, fuel, and paper (DOST-PCAARRD 2008). With this versatility, bamboo products are key potential exports to Asia and in other countries that led the production and export of both novel and traditional bamboo-made commodities.

The Philippines is the world's sixth largest exporter of bamboo and rattan products (Aggangan 2015). However, its $32-million (M) export shares in 2014 (INBAR 2014) were surpassed by Indonesia and Vietnam, which respectively had $149M and $102M. The country's laggard performance was caused by the inability to maximize bamboo production, harvest, and processing primarily due to unfavorable regulatory environment and the lack of reliable and updated bamboo statistics, among other factors.

In 2017, DOST-PCAARRD funded the project, "Creating an Enabling Environment for a Vibrant Philippine Bamboo Industry: Addressing Policy Constraints and Information Needs ." This project sought to provide a scientific basis for an enabling policy environment on bamboo that is in sync with societal needs; generate database information for dissemination; and propose a policy that will encourage bamboo resource development in both the government and the private sector initiatives.

This briefer presents the result of the study, particularly, the country's policy environment on bamboo and compares two scenarios: a) with and b) without Certificate of Verification (CoV), which is a requirement for bamboo harvesting and transport. In addition, other factors that could affect the availability of bamboo culms were examined and recommendations were made to address them.

The study sites include Laguna, Batangas, Pangasinan, Abra, Ilocos Norte, La Union, Palawan, Bulacan, and Bicol in Luzon (Figs. 1 and 2); Iloilo and Bohol in the Visayas; and Davao del Norte and Bukidnon in Mindanao. Surveys, interviews, and focus group discussions among bamboo stakeholders were conducted. Results of this study revealed how the current policies on bamboo affect farmers, traders, processors, private sector, investors, local government units (LGUs), and the research and development (R&D) community.

COV AS A REQUIREMENT: A REGULATORY APPROACH

The Department of Environment and Natural Resources (DENR) Memorandum Circular No. 99-20A requires traders and shippers to apply for CoV certificate from the local Community Environment and Natural Resources Office (CENRO) before harvesting and transporting bamboo poles. CoV is a legal requisite in transporting bamboo from private lands and a proof that they came from a legitimate source, and not from the wild. Traders and truckers use this document to facilitate movement of bamboo from point of origin to destination. CoV indicates quantity, volume, type, and destination of the forest products being transported.

Since CoV is specific only to privately grown bamboo, this serves as a control mechanism and protection of bamboo from the wild. However, CoV is turning out to be a disincentive for the private sector in the bamboo business rather than a mechanism to control the unauthorized movement and disposition of bamboo products. CoV imposition for harvested bamboo stifles private sector investment and discourages bamboo planting. As a result, many private landowners avoid bamboo as a crop, which, among others, causes insufficient supply and hampers the industry's potential to increase exports and provide employment.

The level of awareness and understanding of the implementation of CoV varies among stakeholders. Bamboo growers and traders have limited knowledge of the existing policy.

Fig. 1. Project team visiting bamboo plantation. (Bamboo Project Team, Razal et al. 2018)

Fig. 2. Bamboo plantation in Pangasinan. (Bamboo Project Team Razal, et al. 2018)

Although authorities in the government assert that they are aware of the policy, they have different levels of understanding and interpretation in implementing the policy on the ground.

In the Municipality of Maasin, Iloilo, CoV is virtually non-existent. The municipality produces mechanically produced bamboo stick products and native 'amakan,' woven products that can be used as a housing component, a mat for drying crops, or as containers.

The bamboo industry in Maasin flourished when a local bamboo factory supplied skewers for a grilled chicken dish to a national fast-food chain. Instead of CoV, municipal and barangay transport permits that indicate originating barangay of bamboo poles were required by the local government to ship the products.

In Region 1, bamboo traders in the municipalities and cities are required to acquire CoV to transport bamboo products, aside from municipal permits. The same holds true for the provinces of Pangasinan and Batangas.

In Ilocos Norte and Ilocos Sur, municipal permit suffices when transporting bamboo within each province. However, CoV must be presented at checkpoints when transporting bamboo poles beyond provincial borders.

In Laguna, bamboo traders or farmers must secure DTI permit along with the other requirements.

The application process for securing CoV also varies. According to the DENR's Citizen's Charter Process No. 4, the required fees are P50 for CoV and P50 for the oath application.

Interviews with CoV applicants revealed that the actual fees paid by applicants ranged from P65 to P500.

Adding to the burden of securing a CoV is the processing time that takes 7–14 days depending on the availability of the signatories. The certificate has a short validity period of only 3 days, giving traders and buyers a short window to trade and legally do business in bamboo poles or slats.

CoV and municipal permit are inspected at checkpoints. These documents, however, do not guarantee easy passage through stations, such as avoiding to unload and reload the poles to check for contraband items such as illegally harvested logs. Despite the inconvenience and added costs, traders persist in the business of bamboo pole delivery.

COMPARING WITH AND WITHOUT COV SCENARIO

To determine if removing CoV requirement will benefit the bamboo industry, two cases were considered: 1) Continuous requirement of CoV for private landowners as proof that bamboo poles in transit come from private lands and 2) Cessation of CoV, which simplify policy on transporting bamboo from private lands.

Option 1 values the benefits from the presumed avoided deforestation and improved provisioning and regulating services of the forests (landslide control, restoration, etc.). The costs incurred in this scenario are from the CoV application, bamboo culm senescence, and transaction costs at and across CENRO checkpoints in many locations along the way. Bamboo shipments are still subjected to scrutiny at checkpoints.

Option 2 considers the costs of establishment and development of new plantation and costs for maintaining additional plantation area, harvest and transport, and forest protection.

Following the conduct of the Benefit-Cost Analysis, the results shown in Table 1 indicate that eliminating CoV will accrue financial benefits for the bamboo industry. There is a positive net present value (NPV) and benefit-cost ratio (BCR) greater than one, which imply that eliminating CoV will yield greater benefits than costs.

As discussed above, many bamboo industry stakeholders claimed that the policy was counterproductive and inadequate in protecting bamboo resources in both public and private lands. It is also riddled with implementation inconsistencies and breeds inefficiency and rent-seeking.

Table 1. Summary of NPV (in millions, P) and BCR values at carbon price=US$5 (1 =10%, 1000 poles/ha) of removing the CoV requirement.

Region	NPV(Millions, P)	BCR
CAR	42.89	1.92
Region 1	42.85	2.01
Region 2	47.56	3.27
Region 3	139.44	4.31
Region 4A	198.47	4.28
Region 4B	47.86	3.81
Region 5	93.16	3.97
Region 7	683.78	3.46
Region 10	197.04	3.21

THE IMPEDING FACTOR: LACK OF BAMBOO PRODUCTION AND POLICY INFORMATION

There is a lack of reliable and updated bamboo statistics particularly on the inventory of bamboo resources. Difficulty in cataloguing is due to diversity of bamboo species, nomenclature challenges across regions, non-permanence of culms, and sporadic presence of the plant in different types of landscapes. The absence of information on the location of bamboo materials, which eventually impacts the reliability of raw materials supply, discourages investment from potential growers, traders, and processors.

Aside from the lack of bamboo inventory, it is important to inform bamboo stakeholders of the various policies involving bamboo. However, the study noted that the level of awareness and depth of understanding differ among them.

Results of the key informant interviews (KII) and focus group discussions (FGD) showed that bamboo traders and growers are generally not fully aware of bamboo policies but, they comply and acquire municipal permits each time they gather and transport bamboo. Meanwhile, key informants from DENR, especially those who had been assigned to checkpoints, demonstrated awareness of the policies and requirements for bamboo transport.

OTHER FACTORS HINDERING AN ENABLING ENVIRONMENT FOR BAMBOO DEVELOPMENT

Apart from the issues in the implementation of CoV, the following are other issues and concerns that need to be addressed to enable the development of the bamboo industry, as raised by the bamboo traders, growers, processors, and some DENR officials and staff.

- **Limited awareness and access to the emerging market.** There is an emerging market for bamboo products that are aligned with a sustainable lifestyle. These include drinking bamboo straw, textile, and toiletries, among others. However, raw material providers seem to have limited awareness of the potential uses of bamboo and attendant postharvest processes to make the bamboo raw materials compliant with the requirements of processors.

- **Low incentives for value-adding activities.** Harvesters and primary processors tend to have relatively poor skills and limited uptake of technologies, thus affecting the poor quality of raw materials. This can be addressed by investing in technologies and intensifying technology transfer initiatives. However, market access issues, lack of grading and standardization, and low investments disincentivize value-adding activities.

- **Slow formulation of Integrated Forest Management Agreement (IFMA) tenurial agreement.** FMA is an agreement between DENR and an interested individual, corporation, or cooperative, wherein DENR grants the qualified individual, cooperation, or cooperative the exclusive right to develop, manage, protect, and utilize a specified area of forestland and forest resources for a period of 25 years and may be renewed for another 25-year period, provided that the qualified individual or cooperative shares their produce to the DENR. According to the Forest Management Bureau (FMB), there are still revisions to be made in the policy pertaining to the IFMA tenurial agreement. Therefore, the delay in the issuance of contracts hampers improvements in IFMA areas slated for plantation development.

- **Absence of a fully developed bamboo value chain that will directly support processing, promote economic growth, and create jobs for the youth.** Skilled harvesters of *Bambusa blumeana* o 'kawayan tinik' are aging. Younger cutters of this plant are rare because harvesting of kawayan tinik is dangerous and tedious due to its spiny features. Hence, there is a lack of manpower in the production and utilization. In addition, bamboo production is seasonal, markets are fickle, and competition is fierce that makes employment more difficult to sustain.

- **Pests and diseases of bamboo stands.** Bamboo clumps are attacked by rats especially during plentiful growth of bamboo shoots. Proper management of plantations controls or minimizes pest.
- **No existing policy on bamboo production and utilization.** There is no policy in the form of a bill, an executive order, or an administrative order from DENR that encourages investments in bamboo production and utilization. This should contain provisions supporting and promoting the conduct of bamboo production and processing such as additional funding for bamboo research, financial support to bamboo enterprises, linking of bamboo suppliers to furniture-makers, mandatory use of bamboo materials in some government projects, among others.

RECOMMENDATIONS

The following policy recommendations address the various issues encountered by bamboo traders, growers, and processors such as low production, corruption and harassment, and sale of illegal products.

- **Enactment of the bill on classifying bamboo as a deregulated forest product.** House Bill 6625 states that deregulating bamboo will lower production and transaction costs, minimize corruption and harassment, and discourage the sale of low-cost, illegally harvested logs. LGUs will monitor bamboo resources and address issues on ownership of forestlands planted with bamboo to ensure their protection. In addition, bamboo will be highlighted and developed as an economically important grass crop, which will address low returns from production caused by low pole prices, competition from imported products, and unreliability of suppliers.

- **Simplified policy on transport and harvest**. Pending action on the legislative path, an Administrative Order (AO) for DENR, "Rules and Regulations on the Establishment, Management, and Sustainable Development of Bamboo Plantations and for other Purposes," was drafted by the research team to remove CoV. This was also presented to DENR-FMB, members of Expanded FMB Executive Committee (ExeCom), DENR's Policy Division, and other DENR Bureaus on November 19, 2019. The AO simplifies the requirements for transport and harvest so that investments in the bamboo sector will not be restricted by unnecessary regulations. It also reflects other rules and regulations on bamboo production, R&D, and incentives.

- **Massive technology diffusion.** Another solution to poor returns is improving and incorporating technologies for better production and processing such as preservative treatments, engineered products, and charcoaling (FPRDI 2019). The most appropriate technologies for bamboo depend on the species, the product, and the demand. In the Philippines, the most sought-after species for engineered bamboo are kawayan tinik and giant bamboo because of their thickness and dense culm walls. Kawayan tinik is a good raw material for parquets and laminated products like tables, chairs, and doors. Giant bamboo, on the other hand, is used in construction, pulp, and papermaking (PCAARRD 2019).

- **Information and communications technology (ICT)-supported policy environment.** Potential investors, traders, and processors need access to a reliable database on the nearest sources of raw materials. Information sharing will also strengthen interagency collaboration. The integrated bamboo information network system (BINS) that the project developed, once institutionalized, will involve several government agencies, and possibly the private sector in building the content. The issuance of an administrative order will specify the roles and responsibilities of the identified agencies in the development, management, and operation of the system.

- **Development of nationwide bamboo inventory process.** In addition to the BINS, there is a need to develop and institutionalize a nationwide bamboo inventory process to address the lack of reliable data and statistics on bamboo production in the country. The standard inventory system is important in assessing whether or not the country's bamboo production is sufficient to meet the increasing demand for bamboo. In an effort to address this issue, DOST-PCAARRD collaborated with the University of the Philippines Los Baños (UPLB) in developing a harmonized community-based bamboo inventory system that considers three key production areas—Pangasinan, Iloilo, and Bukidnon. This system takes into account unique features of bamboo that also make bamboo difficult to inventory, such as species diversity, nomenclature challenges across regions, non-permanence of culms, and sporadic presence of the plant in different types

of landscapes. There is also a proposal for a nationwide scale-out of this community-based inventory system developed by the previous project to test the accuracy and reliability of the mapping and inventory system. The proposal also intends to develop a mobile application for ease of data collection, verification, and repeat measurements over time.

CONCLUSION

The PCAARRD-funded study on bamboo has revealed several factors that hinder the development of the country's bamboo industry. Foremost of which are unfavorable policy environment and lack of reliable and updated bamboo statistics. The implementation of CoV, which is originally and purposely designed to protect and regulate the movement of bamboo and its products, has discouraged investment and economic activities in the bamboo industry because of the inconveniences and costs incurred in its application, short validity, and inconsistencies and other issues in its implementation, especially at checkpoints. The process of applying for CoV is tedious and lengthy for bamboo traders and farmers, which adds burden to producers and delays the transport of bamboo products.

On the other hand, there are differences in the implementation of CoV across regions. Some regions require both CoV and municipal permits, while others require municipal and barangay permits only. There were also reported inconsistencies in the regulatory system such as staff asking for additional payment on top of the processing fee in applying for CoV, and personnel at checkpoints accepting "tokens" from traders to ease the process.

Apart from the evidence gathered, comparing the benefits and costs of 'with and without CoV scenario,' through benefit-cost analysis, presented the advantages of eliminating CoV and going for a simplified policy in regulating the movement of bamboo. Results showed that eliminating CoV in the bamboo industry will yield greater economic benefits than costs for the industry, as evidenced by positive NPVs and BCRs greater than one. It is therefore recommended to simplify the regulatory system of harvesting and transporting bamboo products, by removing CoV requirement. A draft AO was prepared and presented by the project team for this purpose, subject to DENR's approval.

Also, the bamboo industry shall be deregulated to lower production and transaction costs, minimize corruption and harassment, and discourage the sale of low-cost illegally harvested logs.

Other specific suggestions to address issues hindering the development of the bamboo industry include the following: development of ICT-supported inventory and statistics on bamboo production; deployment of programs on improving and incorporating technologies for better production and processing such as preservative treatments, engineered products, and charcoaling; deployment of programs creating a fully developed bamboo value chain; fast-tracking IFMA tenurial agreement; and development of a nationwide inventory process.

Project team interview with key informant.
(Image Credit: Bamboo Project Team Razal et al. 2018)

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EDITOR'S NOTE

This policy brief is drawn primarily from the results of the FGDs and KIIs of key bamboo stakeholders in the provinces of Laguna, Batangas, Pangasinan, Abra, Ilocos Norte, La Union, Palawan, Bulacan, and Bicol in Luzon; Iloilo and Bohol in the Visayas; and Davao del Norte and Bukidnon in Mindanao. These activities were undertaken to implement the project, "Creating an Enabling Environment for a Vibrant Philippine Bamboo Industry: Addressing Policy Constraints and Information Needs."

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For more information, please contact:

The Executive Director
DOST-PCAARRD
Los Baños 4030, Laguna, Philippines
Tel. No.: (6349) 554-9670
Fax No.: (6349) 536-0016; 536-7922
E-mail: pcaarrd@pcaarrd.dost.gov.ph
Website: www.pcaarrd.dost.gov.ph

Technical Writers	:	**Ramon A. Razal** **Priscila C. Dolom** **Aresna B. Palacpac** **Sofronio C. Camacho** **Noel L. Tolentino** **Ma. Magdalena B. Villanueva** **Vivian C. Daracan** **Hanna Leen L. Capinpin** **Analyn L. Codilan** **Edgar E. De Vera**
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