



HOUSE OF REPRESENTATIVES

H. No. 10312

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LOYOLA, ROMUALDEZ (F.M.), ROMUALDEZ (Y.M.), ROMUALDEZ (A.J.), ACIDRE, HERNANDEZ (C.A.)
AND POE

AN ACT
MAINSTREAMING THE USE OF BAMBOO AS A SUSTAINABLE AND
CLIMATE-RESILIENT MATERIAL FOR THE BUILT ENVIRONMENT

*Be it enacted by the Senate and House of Representatives of the Philippines in
Congress assembled:*

SECTION 1. Short Title. – This Act shall be known as the “Bamboo for a Sustainable
and Climate-resilient Built Environment Act”.

SEC. 2. Declaration of Policy. – The State shall promote the propagation and
mainstream use of bamboo as a sustainable material for the built environment,
recognizing its role in:

- (a) Advancing climate change mitigation and adaptation by reducing carbon
emissions and enhancing resilience against disasters;
- (b) Strengthening rural livelihoods and creating green, inclusive, and productive
employment opportunities;
- (c) Reducing dependence on imported construction materials and developing
globally competitive local industries; and
- (d) Fostering innovation, research and development, and education to position the
Philippines as a leader in bamboo-based sustainable design and construction.

SEC. 3. Definition of Terms. – As used in this Act,

- (a) *Bamboo* refers to any species within the subfamily bambusoideae of the family
Poaceae, defined as a tropical, subtropical, or temperate fast-growing grass
with lignocellulosic matrix, usually having hollow culms, recognized by the
relevant government agencies as a suitable material for a bamboo structure for
the built environment and other applications;
- (b) *Bamboo Architectural Code (BAC)* refers to the set of regulations and standards
governing the design and specifications, construction, inspection, and

- 1 maintenance of bamboo used as an architectural and building material. In
2 accordance with fabrication standards and Section 4 of this Act, the BAC shall
3 be incorporated in the Architectural Code of the Philippines;
- 4 (c) *Bamboo Structural Code (BSC)* refers to the set of regulations and standards
5 governing the design and specifications, construction, inspection, and
6 maintenance of a bamboo structure. In accordance with fabrication standards
7 and Section 4 of this Act, the BSC shall be incorporated in the Structural Code
8 of the Philippines;
- 9 (d) *Bamboo structure* refers to any building or structure in which bamboo is used
10 as primary load-bearing material;
- 11 (e) *Built environment* refers to the external and internal environments and any
12 element, component, or fitting that is commissioned, designed, specified,
13 constructed and managed for use by people;
- 14 (f) *Carbon footprint* refers to the measure of the greenhouse gas emissions
15 released into the atmosphere by a particular person, organization, product, or
16 activity;
- 17 (g) *Engineered bamboo* refers to composite products manufactured by binding
18 together either veneers, strands, particles, fibers, strips, or slats of bamboo with
19 a suitable adhesive under controlled pressure and where applicable,
20 temperature, designed to meet specific uses and compliant in accordance with
21 Sec. 5(b) and Sec. 10 hereof;
- 22 (h) *Green building* is a building that is environmentally-responsible and resource-
23 efficient throughout its life cycle, from site to design, construction, operation,
24 maintenance, renovation, and demolition;
- 25 (i) *Life cycle assessment (LCA)* refers to the standardized, scientific methodology
26 for evaluating the environmental impact of a product, process, or service
27 throughout its entire life cycle, from raw material acquisition to disposal or
28 recycling; and
- 29 (j) *Mainstreaming* is the process of integrating the use of bamboo as a standard
30 and preferred material in construction and development projects.

31
32 **SEC. 4. Development of the Bamboo Referral Codes for Incorporation in the**
33 **Architectural Code of the Philippines and Structural Code of the Philippines. –**

34 To mainstream the use of bamboo in the built environment to reduce environmental
35 impact throughout its life cycle, integrate and implement green practices, promote the
36 development of a green local market for bamboo, and ensure adherence to the
37 framework of minimum standards and requirements governing buildings and
38 structures, the following are hereby mandated:

- 39
40 (a) Development of the BAC for Adoption in the Architectural Code of the
41 Philippines. – The Professional Regulatory Commission (PRC), through its
42 Professional Regulatory Board (PRB) of Architecture, in consultation with the
43 PRB of Environmental Planning, PRB of Interior Design, PRB of Landscape
44 Architecture, PRB of Civil Engineering, and relevant stakeholders and experts
45 in the use of bamboo for the built environment, shall develop the BAC.

46
47 To mainstream the use of bamboo in the built environment, the BAC shall
48 include guidelines and standards taking into account the best practices for the
49 sustainable use of bamboo, aesthetics, safety, environmental impact, and
50 cultural considerations.

1 In consideration of the foregoing, the PRB-Arch shall incorporate in the BAC,
2 current and subsequent amendments to the Architectural Code of the
3 Philippines: *Provided*, That the Secretary of the Department of Public Works
4 and Highways (DPWH) shall evaluate, review, approve and/or take final action
5 on changes and/or amendments to the BAC, in alignment with legal mandates.
6

- 7 (b) Development of the BSC for Adoption in the Structural Code of the Philippines.
8 – The PRC, through its PRB of Civil Engineering, in consultation with the PRB
9 of Chemical Engineering, PRB of Interior Design, the Department of Human
10 Settlements and Urban Development, National Building Code Development
11 Office, and other relevant stakeholders and experts in the use of bamboo for
12 the built environment, shall develop the BSC.
13

14 The BSC shall include guidelines and standards taking into account structural
15 integrity and safety. The PRB of Civil Engineering shall incorporate the BSC in
16 the current and subsequent amendments to the Structural Code of the
17 Philippines: *Provided*, That the Secretary of the DPWH shall evaluate, review,
18 approve and/or take final action on changes and/or amendments to the BSC,
19 in alignment with legal mandates.
20

- 21 (c) Regulatory Framework. – The DPWH, in collaboration with relevant government
22 agencies, shall:
23

- 24 (i) Develop and update the National Structural Code of the Philippines to
25 include standards for the structural design and use of bamboo and
26 engineered bamboo;
27 (ii) Create a national certification system for bamboo products to ensure
28 compliance with quality, safety, and durability requirements; and
29 (iii) Streamline the permitting process for construction projects that utilize
30 bamboo as the primary material.
31

32 The Secretary of DPWH shall incorporate the aforementioned referral codes in
33 the National Building Code.
34

- 35 (d) Carbon Footprint Reduction and Climate Change Mitigation. – In the
36 development, adoption, and implementation of the BAC and BSC, the PRB-
37 Arch and PRB-CE, in coordination with the Department of Environment and
38 Natural Resources, Climate Change Commission, Department of Energy, and
39 other relevant agencies, shall ensure that bamboo standards, guidelines, and
40 practices incorporate measures that reduce the carbon footprint of buildings
41 and structures, promote life cycle greenhouse gas emissions reduction, support
42 climate-resilient design, and contribute to the national and local climate change
43 mitigation and adaptation targets.
44

45 **SEC. 5. Implementation of the Bamboo Referral Codes. –** 46

- 47 (a) All construction projects that incorporate bamboo as a primary load-bearing
48 material shall comply with the provisions of both the BSC and BAC.

- (b) The DPWH-Offices of Building Official (DPWH-OBO) and DOST-Forest Products Research and Development Institute (DOST-FPRDI) shall enforce compliance with the BSC and BAC during construction inspections, coordinate with the Department of Trade and Industry – Bureau of Philippine Standards (DTI-BPS) on the development of standards, product testing, validation, and certification of bamboo and other green products, ensure that bamboo products comply with applicable national and international benchmarks for safety, quality, and sustainability, and issue certificates of compliance in accordance with applicable conformity assessment and certification rules under the governing regulatory framework.

SEC. 6. Standards, Processing, Environmental Requirements, and Certification of Engineered Bamboo Products. – To ensure the quality, safety, and sustainability of engineered bamboo used for the built environment, all entities engaged in the manufacture, certification, or distribution of engineered bamboo shall comply with the following, in accordance with standards developed by Philippine Bamboo Industry Development Council (PBIDC), in coordination with DOST and DTI:

- (a) Raw Material Requirements. Only mature bamboo culms of suitable species recognized under the Philippine National Standards (PNS) shall be used for engineered bamboo manufacturing. Raw materials must be properly harvested, seasoned, and dried to achieve prescribed moisture content, dimensional tolerances, and quality parameters consistent with the BAC and BSC.
- (b) Chemical Thermal Treatment. All bamboo intended for engineered products shall undergo anti-fungal and anti-termite treatment using chemicals approved by the DENR. Thermal modification, if applied, shall comply with prescribed temperature, duration, and conditioning requirements to ensure dimensional stability, durability, and safety.
- (c) Adhesives, Resins, and Bonding Processes. Only approved adhesive and binder systems or other compliant resins shall be used. Adhesive systems must meet volatile organic compounds (VOC) and formaldehyde emission limits. Bonding, curing, and pressing operations shall be conducted in accordance with minimum pressure, temperature, cycle time, bonding strength, and delamination resistance requirements set by the PNS, BAC, and BSC.
- (d) Composite Manufacturing and Structural Processing. Manufacturing of bamboo laminates, strands, slats, veneers, fibers, and other composite forms shall adhere to approved processing parameters, including densification, hot-pressing, cold-pressing, machining, shaping, and finishing operations. All manufacturers shall implement quality assurance protocols ensuring structural integrity, uniformity, stress gradation, and suitability for structural or non-structural applications.
- (e) Environmental Management, Waste Handling, and Circular Economy Practices. All engineered bamboo facilities shall adopt waste minimization, residue utilization, and circular economy practices, including but not limited to the conversion of bamboo residues into biochar, briquettes, biomass energy, fiber reinforcement, or other value-added by-products. Compliance with

environmental laws on effluent discharge, chemical management, air emissions, and solid waste disposal shall be mandatory. Pollution control devices shall be installed as required by the DENR.

(f) Certified Engineered Bamboo (CEB). All engineered bamboo intended for sale, distribution, building use, or government procurement shall be classified as certified engineered bamboo upon compliance with prescribed standards and certification requirements.

(i) Certification By Licensed Professionals. No engineered bamboo, including structures designed for human application, shall be recognized as CEB unless its design, manufacture, testing, and conformity assessment have been reviewed, signed, and sealed by a licensed professional, which may include a registered chemical engineer, registered civil engineer, or other PRC-licensed professionals with demonstrated competence in materials engineering and engineered bamboo techniques.

(ii) Mandatory Documentation and Conformity Reports. The certifying professional shall issue a Certificate of Conformity attesting that the product:

- complies with applicable PNS;
- meets BAC and BSC requirements;
- adheres to chemical treatment, bonding, environmental, and mechanical specifications; and
- follows verified manufacturing and quality assurance procedures.

(iii) Traceability and Factory Records. Manufacturers shall maintain traceability records including raw material origin, treatment protocols, adhesive batches, pressing parameters, finishing treatments, and test results. Such records shall be made available to PBIDC, Department of Trade and Industry (DTI), DOST-FPRDI, and PRC upon inspection or audit.

(iv) Labeling and Release to Market. Products shall bear the official CEB mark, issued only upon verification of compliance. No product may be marketed, distributed, or used in public infrastructure or government procurement without proper certification.

(v) Penalties for Misrepresentation. Any person or entity that falsely labels, certifies, or markets engineered bamboo as "certified" without meeting the requirements under this section shall be subject to administrative, civil, and criminal penalties provided under this Act, the Consumer Act, and relevant professional regulatory laws.

SEC. 7. Promoting Bamboo as a Sustainable Building Material. – The PBIDC shall provide policy direction and coordinate with the following government agencies to promote bamboo as a sustainable and climate resilient building material.

(a) Promotion and Capacity Building. For practical utilization of bamboo, DTI, DENR, TESDA, DOT, PIA, and other relevant agencies shall promote awareness of the benefits of bamboo as a sustainable building material

1 through public campaigns, education programs, and incentives for bamboo
2 cultivation. The concerned agencies, including TESDA, shall develop and offer
3 bamboo training programs to farmer cooperatives and barangay micro-
4 business enterprises (BMBEs) to encourage bamboo farming and production
5 and enhance knowledge in proper planting and propagation of bamboo,
6 including the bamboo species used as structural elements in construction. The
7 DTI and DOT shall actively promote the use of bamboo in architectural design
8 and product development, highlighting its cultural and aesthetic value.

9
10 (b) Propagation of Bamboo. The Department of Agriculture (DA), DENR, and
11 other relevant agencies shall develop programs, projects and initiatives that
12 will promote and provide bamboo propagules and saplings for free to farmers
13 and BMBEs for the cultivation of bamboo nationwide, sure its
14 commercialization and widespread use in the built environment.

15
16 (c) Research and Development for Bamboo and Establishment and Management
17 of a Comprehensive Data Base for Product Development. The DOST-FPRDI
18 shall:

- 19
20 (i) develop research and development programs on bamboo and its
21 uses in the built environment;
22 (ii) innovate and create new products and uses of bamboo in the built
23 environment; and
24 (iii) maintain a comprehensive database on bamboo research,
25 engineered bamboo, and structural bamboo products and services,
26 for the use of relevant government agencies, the private sector and
27 the DTI in the development of a green local market and to facilitate
28 sustainable public procurement.

29
30 (d) Promote Use of Bamboo Among Professional Practitioners. Coordinate
31 closely with the BAC and BSC stakeholders, relevant government agencies
32 and the private sector to incorporate technological advancements and best
33 practices in bamboo engineering and construction pursuant to Sec. 12 of this
34 Act.

35
36 **SEC. 8. Baseline Utilization of Bamboo for Building Construction.** – Within three
37 (3) years from the enactment of this Act, government agencies shall adopt measures
38 for the construction of government infrastructure utilizing bamboo for the built
39 environment consistent with applicable laws, rules and regulations on sustainable,
40 green, and inclusive public procurement.

- 41
42 (a) For all new building construction, a phased baseline shall apply: at least 30%
43 of the total wood-based structural and non-structural requirements shall use
44 bamboo within the first 3 years, and 50% within 5 years, subject to the
45 availability of supply in certified green local market and the procuring entity's
46 inclusive procurement program;

(b) For identified priority structures as determined by the PBIDC, in consultation with the DTI, the total wood-based volume requirement shall utilize structural bamboo; and

(c) For private sector construction projects, the use of bamboo shall be strongly encouraged, especially those seeking green building certifications. The DPWH and DHSUD shall develop a Philippine Green Building Code that includes provisions to mainstream the use of bamboo as a sustainable and climate-resilient material for the built environment.

SEC. 9. Introduction of the Practical Education of Bamboo Utilization in the Built Environment in Architecture, Engineering, and Regulated Services Curricula. –

To ensure widespread adoption of bamboo, its products, byproducts, and derivatives in building construction, furniture production, and design utilizing bamboo in the built environment, and to ensure the creation of sustainable and resilient supply chains for products and services in relation to the use of bamboo in the built environment, the Commission on Higher Education (CHED), in consultation with the relevant professional regulatory boards, shall integrate practical bamboo utilization and technology in the existing curricula in Architecture, Engineering and related services in the next policies, standards, and guidelines curriculum update of the respective programs, or create a specialization course that integrates bamboo utilization and practical application for the built environment in the existing curricula, without prejudice to the academic freedom of higher education institutions. Specialization courses or elective subjects may be offered to undergraduate Architecture and Engineering students including model-making classes focused on bamboo utilization for the built environment.

SEC. 10. Introduction of the Practical Education of Bamboo Utilization in the Continuing Professional Development (CPD) and Professional Licensure Examinations. – Within five (5) years from the enactment of this Act, the PRC shall require the PRBs for Architecture, Interior Design, and Engineering disciplines to include practical education on bamboo utilization in the built environment as part of the expected learning competency outcomes for licensure examination takers. Moreover, the PRC shall encourage and prioritize continuing professional education providers who can develop and offer practical education on bamboo utilization in the built environment in the form of hands-on workshops for architects, interior designers, and engineers.

The CPD of concerned professionals shall have a seminar of at least five (5) CPD units on “Introduction to Structural Engineered Bamboo”, which shall include model-making.

SEC. 11. Certification of Bamboo for Construction. – The bamboo products, byproducts and their derivatives that will be used for building construction shall be compliant with the Philippine National Standards, National Building Code of the Philippines, Fire Code of the Philippines and other applicable codes.

1 The DPWH-Offices of Building Official shall ensure the application of a simplified
2 permitting process for traditional and vernacular bamboo architecture, through
3 simplified reference standards, detailed documentation, and national education and
4 information campaign on the proper location, design, and construction of traditional
5 indigenous family dwellings and similar traditional bamboo architecture for vernacular
6 use under a simplified permitting process.

7
8 **SEC. 12. Incentives.** – To encourage registered farmer cooperatives and BMBEs to
9 mainstream bamboo as a sustainable building material and scale resilient bamboo
10 value chains, applicable fiscal and non-fiscal incentives shall be applied under existing
11 laws, orders, issuances, and regulations, and Title XII of the National Internal Revenue
12 Code of 1997, as amended by Republic Act No. 12066, otherwise known as the
13 Corporate Recovery and Tax Incentives for Enterprises to Maximize Opportunities for
14 Reinvigorating the Economy (CREATE MORE) Act, Republic Act No. 11321 or the
15 “Sagip Saka Act”, and Republic Act No. 7900, otherwise known as the High Value
16 Crops Development Act of 1995.

17
18 Moreover, the farmer cooperatives and business enterprises shall enjoy tax and duty-
19 free importation of capital equipment that are actually, directly, and exclusively used in
20 the planting, propagation, production, and manufacture of bamboo, engineered
21 bamboo, structural bamboo, structural engineered bamboo, as well as the construction
22 of bamboo structures.

23
24 Finally, investors in bamboo plantation development shall enjoy the following
25 incentives:

- 26
27 (a) Exemption from the payment of rent for the use of government lands for
28 commercial bamboo plantation for the first five (5) years of operation reckoned
29 from the date of the first harvest of the plantation;
30 (b) In the case of private plantations, exemption from the requirement to secure a
31 cutting permit for the harvesting of bamboo and a transport permit for as long
32 as the plantation is registered with the Community Environment and Natural
33 Resources Office (CENRO) of the DENR: *Provided*, That the plantation owner
34 shall inform the CENRO about the date of harvest, and the estimated volume
35 of the harvest. Inventory of the plantation prior to harvest shall not be required.
36 All CENROs shall approve and enter into a registry, the names of private
37 bamboo plantation investors;
38 (c) Exemption from the payment of forest charges and other fees for taxes that
39 local government units may impose;
40 (d) Access to development loans from public financial institutions for plantation
41 developers;
42 (e) Insurance coverage of plantations and plantation development equipment by
43 the Philippine Crop Insurance Corporation;
44 (f) Tax-free importation of plantation development equipment, including tree
45 nursery facilities, pursuant to Republic Act No. 10863, otherwise known as the
46 “Customs Modernization and Tariff Act (CMTA)”;
47 (g) To claim expenses incurred in plantation operations as deductible expenses for
48 income tax purposes, subject to the provisions of the National Internal Revenue

Code of 1997, as amended: *Provided*, That the deduction shall only apply to the taxable period when the expenses were incurred;

- (h) To claim as ordinary and necessary expenses or as capital expenditure expenses incurred in the development and operation of a bamboo plantation prior to the initial commercial harvest;
- (i) Prioritized access for plantation developments to credit assistance from government-owned, controlled or supported financial institutions;
- (j) Acceptance of plantation as collateral for loans in government-owned or controlled banks;
- (k) In the case of a tenured developer, entitlement to fair compensation upon the premature termination of the agreement at no fault of the holder: *Provided*, That all depreciable permanent and semi-permanent improvements such as roads, buildings, and nurseries including the planted and standing trees and other forest crops introduced and retained in the area, shall be properly evaluated: *Provided, further*, That the amount of compensation shall be mutually agreed upon by both the DENR and the tenure holder: *Provided, finally*, That in case of disagreement between them, the matter shall be submitted to arbitration by a mutually acceptable and impartial third party adjudicator;
- (l) No volume restriction in the exportation of bamboo culms from plantation;
- (m) Tax-free importation of processing equipment by processors engaged in the bamboo industry, pursuant to Republic Act No. 10863; and
- (n) Inclusion in the annual investment program of the Department of Economy, Planning and Development (DEPDev) of industrial bamboo plantations in forest lands and priority access to grants and funds from external and internal sources.

SEC. 13. Reporting and Review. – The PBIDC, DTI an DPWH shall conduct periodic reviews and updates of the BSC and BAC to incorporate technological advancements and best practices in bamboo engineering and construction.

SEC. 14. Implementing Rules and Regulations. – Within ninety (90) days after the effectivity of this Act, the PBIDC shall, in coordination with the DPWH, DTI, DENR, DA, DOST, Department of the Interior and Local Government, DEPDev, CHED, Department of Education, Philippine Information Agency, and other relevant stakeholders, formulate and promulgate the necessary rules and regulations for the effective implementation of this Act.

SEC. 15. Separability Clause. – If any provision of this Act is declared invalid or unconstitutional, the remaining provisions not affected thereby shall remain in full force and effect.

SEC. 16. Repealing Clause. – All laws, decrees, or regulations inconsistent with the provisions of this Act are hereby repealed or modified accordingly.

SEC. 17. Effectivity. – This Act shall take effect fifteen (15) days after its publication in the *Official Gazette* or in a newspaper of general circulation.

Approved,