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DENR ADMINISTRATIVE ORDER  
No. 2017 - 05

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**SUBJECT : GUIDELINES IN THE IMPLEMENTATION  
OF THE BIOCHAR PROGRAM**

In consonance with the 17 Sustainable Development Goals of the 2030 Agenda for Sustainable Development, which was unanimously approved by all Member States of the United Nations with the view of ending poverty, protecting the planet and ensuring prosperity for all; and the 25-year long term vision entitled “*Ambisyon Natin 2040*” enshrined in Executive Order No. 05 dated October 11, 2016, the Department of Environment and Natural Resources (DENR) adopted a paradigm shift embodied by the Sustainable Integrated Area Development (SIAD), which is an approach, a strategy and a guiding philosophy that weaves environmental considerations with social justice and human development.

The SIAD concept as articulated under Philippine Agenda 21, the country’s blueprint for sustainable development, describes a path for individuals, families, households and communities to craft an action plan for each ecosystem and across ecosystems in a sustainable manner. The SIAD approach entails mobilization of a broad-based support for localization of poverty eradication and ecosystems integrity programs, projects and activities.

Along this line, Biochar calls for the wise utilization of abundant agricultural waste materials into marketable products created by rural communities for green energy, soil enhancement, mine rehabilitation, among others, making it a remarkable climate change mitigation technology with a poverty alleviation component. As such, the following guidelines are hereby issued:

**Section 1. Objectives.** The Biochar Program aims to:

1. Remediate problematic environmental problems, such as, but not limited to: unsanitary landfills, unsanitary livestock raising, unsanitary sewage disposal, greenhouse gas emissions from agriculture, greenhouse gas emissions from landfills, and heavily degraded land from mining;
2. Address the acidification of forest lands; support better survival of seedling and trees in the reforestation program of the government; removal of heavy metals from soils; the removal of oil spills from mangroves and coastal waters and areas; improving indoor environment from molds and air borne toxins; dealing with excess biomass waste from agriculture and forestry; reduce illegal tree cutting for charcoal making; improving the sanitation of evacuation centers; preserving fruits and vegetables without the use of electricity; reducing flies and cockroaches in homes and buildings; composting kitchen and household biomass waste for landfill reduction;
3. Organize numerous Community Enterprises that generate decent household income around the supply of Biochar and its derivative and associative products to the issuers of the above-cited environmental problems;
4. Create a significant new industry revolving around Biochar and its derivative and associative products that is progressive in R&D, Market Development (local and export), and inter-industry cooperation; and

5. Help mitigate the effects of climate change.

**Section 2. Definition of Terms.** For purposes of this Guideline, the following definition of terms shall be used:

**Biochar** – a form of charcoal that is produced by exposing organic waste matter to heat in a low-oxygen environment. It can be used for a range of applications as an agent for soil improvement, improved resource use efficiency, remediation and/or protection against particular environmental pollution and as an avenue for greenhouse gas (GHG) mitigation.<sup>1</sup>

Cutting of any trees to serve as raw materials for Biochar is strictly prohibited on this Guideline. However, biomass coming from trees, such as, wood chips, seeds, twigs and branches can be permitted.

**Community Enterprise** – a number of households in a community with a minimum of 15 members that voluntarily formed themselves into an enterprise to engage in Biochar production and subsequently registered with the concerned government agency.

**Section 3. Scope and Coverage.** The Biochar Program shall be implemented in conjunction with the implementation of the Sustainable Integrated Area Development (SIAD) approach in the Department's programs on reforestation, mine rehabilitation, green energy, pollution mitigation, ecotourism, agroforestry, rehabilitation of coastal environment, among others.

The Biochar Program will also involve the organization and development of Community Enterprises composed of households in all the Biochar sites of the Department.

**Section 4. General Strategies.** The Biochar Program shall be implemented through the following strategies:

1. Require strict compliance for sectors/companies that have related ECC obligations where Biochar can be of use;
2. Spin-off a Biochar Industry Development Program Management Office led by the Private Sector and inclusive of government line agencies, LGUs, Corporations, Community enterprises;
3. Provide a Validation Mechanism for GHG offsets to achieve a high degree of Trust in a Local Certification System to achieve accurate compliance monitoring; and
4. Advocacy and Training on Community Enterprise Development and "Local Economy for Local People".

**Section 5. Program Components.** The Biochar Program shall be implemented alone or in conjunction with other programs of the Department and in close partnership with People's Organizations (POs) through the following components:

- 5.1 Program Management and Implementation. This component has three (3) main activities:
  - 5.1.1. This involves the series of trainings on Biochar Technology to partner POs and other stakeholders.
  - 5.1.2. This involves the series of trainings on the organization and development of Community Enterprises from partner POs.

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<sup>1</sup>www.biochar.org

5.1.3. **Monitoring and Evaluation.** This involves the regular monitoring and evaluation of Biochar implementation in the field.

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5.2 The Biochar Program, with 52 known uses below, shall be implemented with Other Government Agencies, People's Organizations, Civil Society Organizations, Private Sector, Social Entrepreneurs, and others on a convergence approach.

5.2.1 **Cascaded use of biochar in animal farming to reduce / remove foul odors** 1. Silage agent, 2. Feed additive / supplement, 3. Litter additive, 4. Slurry treatment, 5. Manure composting, 6. Water treatment in fish farming

5.2.2 **Use as a soil conditioner (including mined sites)** 7. Carbon fertilizer, 8. Compost additive, 9. Substitute for peat in potting soil, 10. Plant protection, 11. Compensatory fertilizer for trace elements

5.2.3 **Use in the building sector** 12. Insulation, 13. Air decontamination, 14. Decontamination of earth foundations, 15. Humidity regulation, 16. Protection against electromagnetic radiation ("electrosmog")

5.2.4 **Decontamination** 17. Soil additive for soil remediation – for use in particular on former mine-works, military bases and landfill sites) 18. Soil substrates – Highly adsorbing, plantable soil substrates for use in cleaning wastewater; in particular urban wastewater contaminated by heavy metals 19. A barrier preventing pesticides getting into surface water – berms around fields and ponds can be equipped with 30-50 cm deep barriers made of biochar for filtering out pesticides 20. Treating pond and lake water – biochar is good for adsorbing pesticides and fertilizers, as well as for improving water aeration.

5.2.5 **Biogas production** 21. Biomass additive, 22. Biogas slurry treatment

5.2.6 **The treatment of wastewater** 23. Active carbon filter, 24. Pre-rinsing additive, 25. Soil substrate for organic plant beds, 26. Composting toilets

5.2.7 **The treatment of drinking water** 27. Micro-filters, 28. Macro-filters in developing countries

5.2.8 **Other industrial uses** Exhaust filters (29. Controlling emissions, 30. Room air filters) Industrial materials (31. carbon fibers, 32. plastics) Electronics (33. semiconductors, 34. batteries) Metallurgy (35. metal reduction) Cosmetics (36. soaps, 37. skin-cream, 38. therapeutic bath additives) Paints and coloring (39. food colorants, 40. industrial paints) Energy production (41. pellets, 42. substitute for lignite)

5.2.9 **Medicines** 43. detoxification, 44. carrier for active pharmaceutical ingredients, 45. Cataplasm for insect bites, abscesses, eczema...

5.2.10 **Textiles** 46. Fabric additive for functional underwear, 47. Thermal insulation for functional clothing, 48. Deodorant for shoe soles

5.2.11 **Wellness** 49. Filling for mattresses, 50. filling for pillows

5.2.12 **Other Uses** 51. Shield against electromagnetic radiation 52. Food Conservation

All of the proposed biochar uses except nos. 35, 41, 42 are carbon sinks. After its initial or cascading use, the biochar can be recycled as a soil conditioner. Fully depreciated when finally returned to the soil, the black carbon will slowly build up in the soil – and over a few generations the soil’s biochar content could easily reach 50 to 100 tons per hectare, as its the case in the ancient Terra Preta soils.

**Section 6. Operation and Implementation Arrangements**

The implementation of the Biochar Program shall be the primary responsibility of the Field Operations Office including all DENR field offices under the Undersecretary for Field Operations.

The Undersecretary for Field Operations shall supervise the implementation of all program activities and ensure the attainment of the objectives of the Biochar Program.

All DENR Bureaus and offices, as well as, attached agencies shall provide technical assistance and support the implementation of the Program.


A Sustainable Integrated Area Development (SIAD) Implementation and Coordination Desk shall be established with management and staff complement to coordinate and monitor the implementation of the Biochar Program.

**Section 7. Registry of Biochar Projects.** Consistent with the Manual on New Government accounting System (NGAS), a Registry of Biochar projects shall be maintained for each Biochar site. The Regional Offices shall consolidate and submit the Registry to the Offices of the Undersecretary for Field Operations and the Undersecretary for Policy and Planning.

**Section 8. Funding.** The Department shall allocate sufficient funds to support the implementation of the Biochar Program.


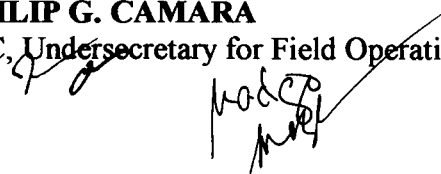
**Section 9. Repealing Clause.** This Administrative Order shall supersede other issuances that are inconsistent herewith.

**Section 10. Effectivity.** This Administrative Order shall take effect upon publication in a newspaper of national circulation and submission of copy to the Office of the National Administrative Registry (ONAR).

  
**REGINA PAZ L. LOPEZ**  
Secretary



Recommending Approval:

  
**PHILIP G. CAMARA**  
OIC, Undersecretary for Field Operations  


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