

DECISION

Approving Action plan of effective management and utilization of rice biomass for energy production in climate change context for An Giang province period 2018 - 2030

CHAIRMAN OF PEOPLE'S COMMITTEE OF AN GIANG

Pursuant to Decision No. 1566/QĐ-UBND dated 25/8/2010 of An Giang People's Committee (PPC) regarding approving the planning of environmental protection of An Giang province up to 2020;

Pursuant to Decision No. 241/QĐ-UBND dated 09/02/2015 of PPC regarding approving Strategy of effective management and utilization of rice biomass for energy production in climate change context for An Giang province to 2030;

Pursuant to the Decision No. 1873/QĐ-UBND dated 11 September 2015 of the People's Committee of An Giang Province regarding approving the Outline and Implementation plan of the Project "Action Plan for utilizing rice waste" In the cooperation program between An Giang province and Pitea, Sweden,

Consider the proposal of Steering committee of An Giang – Sweden cooperative program at the report No. 422/TTr- BĐHCTHTTĐ dated 16/11/2017;

QUYẾT ĐỊNH:

Article 1. Approve Action plan of effective management and utilization of rice biomass for energy production in climate change context for An Giang province period 2018 - 2030, with some main contents as following:

1. Name and management unit: Action plan of effective management and utilization of rice biomass for energy production in climate change context for An Giang province period 2018 - 2030;

2. Management unit: An Giang Department of Natural Resources and Environment.

3. Objectives

a) Overall objectives:

Establish management system and use of rice biomass to develop sustainable, efficient, safe and low-impact energy for health, environment and climate change.

b) Specific Objectives:

- Increase renewable energy production and energy products

+ By 2030, An Giang will have 101,440 ha of high-tech rice planted with method 1 to 5 reduction. CO2 reduction: 300 888 tonnes.

+ Area of straw collected: 40%.

+ The ratio of straw collected for energy production: 15%.

+ Ratio of rice husk to be collected for rice husk production and other energy products: 50%.

- Increase the participation and interest of the whole society.

- Contribute to the economic growth in a sustainable way for An Giang province as well as Chau Thanh district on rice production and processing.

4. Time for implementation: 2018-2030

5. Goals of the plan

a) Goal 1: International cooperation in field of capacity building on agricultural residues management, and application of international advanced technologies on rice waste-to-energy in An Giang, Vietnam

No.	Action plan	Activities
1.1	Develop the feasibility studies in order to attract capital investment	<p>Period 1: 2018-2020</p> <p>Organize training on how to build a pre-feasibility project for enterprises on rice ecological cluster, combined site visit for students in Vietnam: 01 training course/year (10 pp/course)</p> <p>training on how to build a pre-feasibility project for enterprises on rice by-products and new environmentally friendly products: 01 course/year (10 enterprises/course)</p> <p>Hire experts to support the development of pre-feasibility projects for enterprises.</p> <p>Organize seminars to evaluate and filter projects: 2 seminars</p>

		<p>Period 2: 2021-2030</p> <p>Hire consultants to build feasible projects. There are 2 for rice ecological cluster and 5 for rice byproducts and new environmentally friendly products.</p> <p>It is expected that 01 feasibility study will be carried out.</p> <p>Organize dissemination workshop: 2 workshop</p>
1.2	<p>Improve human resource capacity in foreign languages and participate in international workshops/training on biomass and renewable energy management</p>	<p>Period 1: 2018 – 2020</p> <p>Organize English training course for staff: 1 courses/year - 5 people/course</p> <p>Participate in the international workshop on biomass and renewable energy management held in Vietnam: 01 workshops/year</p> <p>Attend international seminar on biomass and renewable energy management held abroad: 1 workshops/year</p> <p>Organize study visits for businesses, farmers to visit in organizations where high-technology applications are applied: 1/year in Vietnam.</p> <p>Period 2021 - 2030:</p> <p>Organize English advanced training course for staff: 1 courses/year - 5 people/course</p> <p>Participate in the international workshop on biomass and renewable energy management held in Vietnam: 01 workshops/year</p> <p>Attend international seminar on biomass and renewable energy management held abroad: 1 workshops/year</p> <p>Organize study visits for businesses, farmers to visit in organizations where</p>

		high-technology applications are applied: 1/year in Vietnam
1.3	Maintaining and supporting the implementation of new projects	<p>Period 2018 -2020:</p> <p>Send people to training on how to write outlines and project management: 3 person/course/year</p> <p>To formulate and assume the prime responsibility for 1 international cooperation project till 2020</p> <p>Period 2021 -2030:</p> <p>Organize training on how to write outlines and project management: 3 person/course/year</p> <p>build international cooperation projects contribute to reducing greenhouse gas emissions for funding 01 projects</p>

b) Goal 2: Training to improve the capacity of local government officials and businesses on renewable energy development and greenhouse gas (GHG) emissions reductions.

No.	Action plan	Activities
	Training to improve the capacity of local government officials and businesses on renewable energy development and greenhouse gas (GHG) emissions reductions	<p><u>Period: 2018-2020</u></p> <p>- In 2018: The Safety Techniques and Environment Offices under the Department of Industry and Trade shall</p> <p>+ Estimate the number of provincial, district, and communal government officials and enterprises who are eligible and potential to be trained on state management of renewable energy development and (GHG) emissions reductions.</p> <p>+ Develop a detailed plan for the organization of three workshops and three training courses for the period from 2018 to 2020 (annual workshops</p>

		<p>and courses) to submit to the competent authority for approval.</p> <ul style="list-style-type: none"> + Contact and hire speakers who are good at professional knowledge on renewable energy development and (GHG) emissions reductions. + Organize the annual workshops and training courses. - To organize field trips to visit organizations and businesses who are using or researching renewable energy development and emissions reductions for each training course. - To send 05 officials to attend domestic and international training courses - In 2020: Conduct the final report to evaluate the results of the workshops and training courses and to gain the experience for the next stage. <p><u>Period: 2021-2030</u></p> <ul style="list-style-type: none"> - In late 2020: + Developing a detailed plan for the organization of five workshops and five training courses for the period from 2021 to 2030 (biennial workshops and training courses) to submit to the competent authority for approval. - Contacting and hiring speakers who are good at professional knowledge on renewable energy development and emissions reductions. - Organizing the biennial workshops and training courses from 2021 to 2030. - In late 2030: Making a final report to evaluate the results of holding the workshops and training courses.
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c) **Goal 3:** Development of rice eco-industrial clusters.

No.	Action plan	Activities
	Development of rice eco-industrial clusters	<p><u>Period: 2018-2020</u></p> <ul style="list-style-type: none"> - In 2018, The Office of Industry Management under An Giang Province Department of Trade and Industry will develop a project proposal and estimating the cost of building a plan on developing rice two eco-industrial clusters in An Giang province, and sending it to the People’s Committee of An Giang province for approval. - From 2018 to 2020: Call for investment and implementing to build the first rice eco-industrial cluster. - In late 2020: Conduct the final report to evaluate the results of project implementation and to gain the experience for the next stage. <p><u>Period: 2021-2030</u></p> <ul style="list-style-type: none"> - From 2018 to 2030: Call for investment and implementing to build the second rice eco-industrial cluster. - In late 2030: Meet to review, evaluate and finish the project.

d) Goal 4: Encouraging enterprises to develop green production and green products from rice residues

No.	Action plan	Activities
4.1	<p>Promoting activities for the development of green products from rice residues</p> <p>Apply the available policies to support the label development and application of new technologies</p>	<p><u>Period: 2018-2020</u></p> <ul style="list-style-type: none"> - Support the local enterprises, farmer associations and farmer unions in consulting, designing, registering trademarks for the green products coming from rice residues, 03 trademarks (01 trademark/year x 03 years) - Support the local enterprises, farmers, farmer associations and farmer unions

	<p>in using An Giang Agricultural Trademark for the green products coming from rice residues, 03 users (01 users/year x 03 years).</p> <ul style="list-style-type: none"> - Advertise the brands of the green products coming from rice residues on the local television, newspapers, scientific magazines, websites 36 news (12 news/year x 03 years) in which at least 01 time on the television/year. - Participate in the local and different other kinds of fairs, 03 times (01 time/year x 03 years). <p><u>Period: 2021-2030</u></p> <ul style="list-style-type: none"> - Support the local enterprises, farmer associations and farmer unions in consulting, designing, registering trademarks for the green products coming from rice residues, 10 trademarks (one trademark/year x 10 years) - Support the local enterprises, farmers, farmer associations and farmer unions in using An Giang Agricultural Trademark for the green products coming from rice residues, 10 users (01 users/year x 10 years) - Advertise the brands of the green products coming from rice residues on the local television, newspapers, scientific magazines, websites 120 news (12 news/year x 10 years) in which at least 01 time on the television/year ...; participate in the local and different other kinds of fairs, 10 times (01 time/year x 10 years). - participate in the local and different other kinds of fairs, 10 times (01 time/year x 10 years).
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<p>4.2</p>	<p>Supporting the establishments of models on producing green products from rice residues and using environmental friendly technologies in localities</p>	<p><u>Period: 2018-2020</u></p> <ul style="list-style-type: none"> - Implement 01 provincial projects, equal to 01 models which produce green products coming from rice residues and apply environmental friendly technologies (can be new establishment models or existing models change to new technologies). Each model has: <ul style="list-style-type: none"> + At least 1 new technology which has the eligibility criterias is contributing to the reduce at least 5% gas emission of the models. + 01 training course: transfer new technologies; teachers (scientists, technicians, specialists); 20 participants (technicians, farmers, entrepreneurs; priority for women, at least 20%,...); the venues are in the models. + 01 conference: report and estimate the results of the models; reporters (project owners, scientists, technicians, specialists); 30 participants (technicians, farmers, entrepreneurs; priority for women, at least 20%,...); the venues may in the models or in the center of the town, district. - Combine telecommunication (television, newspaper, website, magazine,...) to broaden the number of models to the local community. <p><u>Period: 2021-2030</u></p> <ul style="list-style-type: none"> - Implement 03 provincial projects, equal to 03 models which produce green products coming from rice residues and apply environmental friendly technologies. + At least 1 new technology which has the eligibility criterias is contributing to the reduce at least 5% gas emission of the models.
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		<p>+ 03 training course: transfer new technologies; teachers (scientists, technicians, specialists); 60 participants (technicians, farmers, entrepreneurs; priority for women, at least 20%,...); the venues are in the models.</p> <p>+ 03 conference: report and estimate the results of the models; reporters (project owners, scientists, technicians, specialists); 90 participants (technicians, farmers, entrepreneurs; priority for women, at least 20%,...); the venues may in the models or in the center of the town, district.</p> <p>- Combine telecommunication (television, newspaper, website, magazine,...) to broaden the number of models to the local community.</p>
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d) Goal 5: Scientific research and application of supportive policies on biomass energy development and other green products from rice residues; Develop research, new creative ideas in bioenergy and green products

No.	Action plan	Activities
5.1	Develop the research ideas, Innovation, creation in field of developing biomass energy and green products	<p><u>Period: 2018-2020</u></p> <p>- Cooperate scientists, specialists from universities, institutions to observe 11 districts, cities of An Giang province to identify and build practical ideas in the areas of biomass energy and green products.</p> <p>- Call ideas from departments, People Committee at district/city level and community by Website of Science and Technology Department, An Giang Newspaper and An Giang Radio – Television Station.</p> <p>- Organise science boards to select practical ideas in the areas of biomass energy and green products for An</p>

		<p>Giang, at least 03 ideas (01 idea/year x 03 years).</p> <p><u>Period: 2021-2030</u></p> <ul style="list-style-type: none"> - Continue to getting ideas from university, institution, People Committee at district/city level, enterprises and community. - Organise competition to get new idea in innovation. - Organise science boards to select practical ideas for An Giang, about 10 ideas (01 idea/year x 10 years)
5.2	<p>International cooperation on scientific research and technology development in field of developing biomass energy and green products</p>	<p><u>Period: 2018-2020</u></p> <ul style="list-style-type: none"> - Organise 01 international conferences: <ul style="list-style-type: none"> + To share the research results new technologies; get new ideas in the areas of biomass energy and green products and also market the products. + Reporters are scientists, specialists, managers and entrepreneurs of Viet Nam and Sweden. + 80 participants are managers, entrepreneurs, farmers, technicians. + Venues: An Giang province. <p><u>Period: 2021-2030</u></p> <ul style="list-style-type: none"> - Organise 02 international conferences: <ul style="list-style-type: none"> + To share the research results new technologies; get new ideas in the areas of biomass energy and green products and also market the products. + Reporters are scientists, specialists, managers and entrepreneurs of Viet Nam and Sweden. + 160 participants are managers, entrepreneurs, farmers, technicians (50 participants/conference). + Venues: An Giang province.

5.3	Support the research organization, applications and technology transfer	<p><u>Period: 2018-2020</u></p> <ul style="list-style-type: none"> - Apply current policies (Decision number 567/QĐ-UBND) to support new applicants using research results, technologies and pilot models in the areas of biomass energy and green products coming from rice residues. 05 applicants who are the first person apply new technologies, support around of 30% of these technologies cost. - Combine telecommunication (television, newspaper, website, magazine,...) to broaden the number of applicants. <p><u>Period: 2021-2030</u></p> <ul style="list-style-type: none"> - Support new applicants using research results, technologies and pilot models in the areas of biomass energy and green products coming from rice residues. 15 applicants who are the first person apply new technologies, support around of 30% of these technologies cost. - Combine telecommunication (television, newspaper, website, magazine,...) to broaden the number of applicants.
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e) **Goal 6:** Improve awareness of farmers, enterprises, technicians about advantages of rice residues utilization and roles of biomass energy production.

No.	Action plan	Activities
1	Implement demonstration models of agricultural wastes utilization, mostly focus on rice husk and rice straw utilization	<p>Period 1: 2018-2020</p> <ul style="list-style-type: none"> + The total area of rice paddy for straw collection is 9.000 hectares, with 3.000 hectares in Chau Thanh district. + The total amount of collected rice straw is around 22.500 tons + Demonstration models: four different types of models will be

	<p>carried out to examine the advantages of rice straw utilization.</p> <p>a) <u>Straw mushroom production:</u> the total 40 hectares of rice straw mushroom production will be carried out in Chau Thanh and Thoai Son districts. The straw is used as main substrate to produce straw mushrooms and the total of straw, therefore, there will be 5.000 tons, collected from 2.000 hectares rice paddy.</p> <p>b) <u>Using urea-treated rice straw for feeding livestock:</u> the total of 2.500 cattle or buffaloes will be fed by urea-treated rice straw. Each model is implemented at least in 3 months in Cho Moi and Chau Phu districts. The total 1.000 tons of straw generated from 400 hectares rice paddy will be collected and treated with urea before feeding.</p> <p>c) <u>Using composts or ecological mulch from rice straw:</u> the total 2.000 hectares of vegetables or flowers cultivation will be tested with composts or ecological mulch using rice straw as main materials to reduce the use of chemicals and plastic mulch. The total amount of rice straw consumed is 10.000 tons, collected from 4.000 hectares rice paddy in Cho Moi, Chau Phu, An Phu, Phu Tan and Long Xuyen</p> <p>d) <u>Rice cultivation using composted rice straw treated by Trichoderma species:</u> the total areas of demonstration models are 2.000 hectares rice paddy in Tinh Bien, Tri Ton, An Phu, Chau Phu, Thoai Son, Cho Moi, Tan Chau and Phu Tan. In each model, composted rice straw treated by Trichoderma species will be used and sustainable rice cultivation techniques (3 Reductions, 3</p>
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	<p>Gains or 1 Must Do, 5 Reductions) are applied. This will prevent direct burning of 6.000 tons straw in fields and reduce organic poisoning in rice cultivated soil.</p> <p>- Period 2: 2021-2030:</p> <ul style="list-style-type: none"> + The total areas of rice paddy for straw collection is 9.400 hectares, of which 1.760 hectares are in Chau Thanh district. + The total amount of collected rice straw is around 23.500 tons + Demonstration models: four types of models will be carried out to examine the advantages of rice straw utilization. <p>a) <u>Straw mushroom production:</u> the total 40 hectares of rice straw mushroom production will be carried out in Chau Thanh, Cho Moi and Thoai Son districts. The total of rice paddy area for straw collection is from 2.000 hectares</p> <p>b) <u>Using urea-treated rice straw for feeding livestock:</u> the total of 2.125 cattle or buffaloes will be fed with by urea-treated rice straw. The total 850 tons straw that are collected from 340 hectares rice paddy will be collected</p> <p>c) <u>Using composts or ecological mulch from rice straw:</u> the total 3.000 hectares of vegetables or flowers cultivation will be tested with composts or ecological mulch. The total amount of rice straw consumed is 15.000 tons, collected from 6.000 hectares rice paddy</p> <p>d) <u>Rice cultivation using composted rice straw treated by Trichoderma species:</u> the total areas of demonstration models are 3.500 hectares rice paddy. Composted rice</p>
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		<p>straw treated by Trichoderma species will be used and sustainable rice cultivation techniques will be applied in demonstration models</p>
2	<p>Capacity building for farmers, enterprise and technicians</p>	<p>Period 1: 2018-2020:</p> <p>1. Organize 15 training course (20 participants/3 days class) - Objective: (1) improve knowledge and skills for farmers, enterprises and technicians and (2) to form local core teams. - Subject: (1) Effectiveness of agricultural wastes utilization; (2) Government support to implement demonstration models; (3) Applied technologies for agricultural wastes utilization; (4) How to approach financial support to carry out potential agricultural wastes utilization projects; (5) How to turn good ideas into research and practice; (6) Develop communities based green energy projects; and (7) other topics that are suitable for farmers and enterprises</p> <p>2. Organize 02 field trip visits (20 participants/6 days trip) - Objective: exchange experience and skills to apply technologies and implement effective models. - Activities: (1) visit effective models of biomass, bioenergy production and composting technologies from rice straw, rice husks, other kinds of agricultural wastes; (2) participate in science workshops in Universities, Institutes to gain more knowledge and experience; (3) visit enterprises who are leading in application of biomass, bioenergy production technology.</p>

g) Goal 7: Communication plan

No.	Action plan	Activities
1	Disseminate the contents of the Action plan through the media channels	<p>Disseminate the contents of the Action plan through:</p> <ul style="list-style-type: none"> - Website of the project: Upgrade and maintain website angiang-sweden.com. Carry out additional collection and editing of information contents of the project, translating necessary contents into English. Improve the interface and images of the existing website to ensure good service propaganda on the Internet. Combined propaganda on An Giang Information Portal - Department of Information. To build up the network of collaborators to write news and propaganda for the project; Prioritize the selection of collaborators who are participating in project implementation. - Radio stations in districts, towns and cities: disseminate the cooperation program with Sweden on the radio broadcasting of 11 districts, towns and cities to help local people have access to information. Broadcasting activities on the radio include the activities of the project, the benefits of the project in utilizing the agricultural waste products, demonstration models for classification and treatment of solid waste. - An Giang Newspaper: Coordinated with An Giang Newspaper to get/broadcast information, information introduction, project related events, seminars, and demonstrations. - An Giang Radio and Television: broadcast on local television: latest information about the project. Recording press interviews for the relevant subjects: members of the supervisory board; local leaders; the people involved in the project ... Video

		<p>recording and production of documentary films, reportage on the content need information, propaganda, demonstration models to broadcast on local television channel. It helps propagate widely to people inside and outside the province.- Social Network: Utilize social networking tools like Facebook, Youtube ... from accounts created by project members. To take advantage of the versatility and popularity of this modern media to post photos, information on international cooperation, rice ecology models ... Especially can create favorable conditions. and the ease of communication between project members, between project members and the community. Help the community easily access information, update quickly and continuously. Take advantage of the available features of smartphone, tablet ... to convey information quickly, anytime, anywhere.</p> <p>- Leaflets, brochures, propaganda banners: To distribute 100,000 flyer leaflets to people of 156 communes, wards and townships in the district. The purpose is to raise the awareness of people about biomass energy visually.</p>
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6. Cost estimation

The total cost is 515,216,683,000 VND. Of which, social mobilization was 486,100,000,000 VND, provincial budget was 29,116,683,000 VND (Twenty nine billion, one hundred and sixteen million, six hundred and eighty three thousand Vietnamese dong). Include:

- Expenditures for environmental care: 4,890,883,000 VND.
- Expenditures for economic development of the province: 6,979,250,000 VND.
- Expenditures for science and technology: 6,757,800,000 VND.

- Expenditures for agricultural production: 6,238,750,000 VND.

- Annual budget of the Department of Information and Communication: 4,250,000,000 VND.

Based on the ability to balance the budget and the actual situation of the province, every year, relevant units must develop specific implementation plans to work with relevant Departments and Finance Departments to agree on the content, funding and funding source to comply with regulations, submit to the provincial People's Committee for consideration, decision, allocation of funds.

7. Organization of implementation

a) Line agency

Natural resources and Environment Department chair and coordinate with related departments and organizations in order to

b) Coordinating agency:

Industry and Trade Department, Science and Technology Department, Agricultural and Rural development Department, Information and Communication Department, Finance Department, People's Committee at districts and cities, An Giang - Sweden PMU

Article 2. This Decision shall take effect from the date of signing

Article 3: Chief of Office of the Provincial People's Committee, Director of the Department of Natural Resources and Environment, Steering committee of An Giang – Sweden cooperative program, An Giang - Sweden PMU, Director of related Departments, units, Chairman People's Committee at districts and cities are responsible for implementing this Decision./.

Recipients:

- Permanent People's Council, PPC;
- Departments, Provincial Union;
- Leaders PPC office;
- DPCs, city;
- Economic, Administrative Division.

**PP. CHAIRMAN
VICE CHAIRMAN
(SIGNED AND SEALED)**

Lam Quang Thi