

Country Name	<b>Establishment of Sustainable Livelihood Strategies and Natural Resource Management in Tropical Rain Forest and Its Surrounding Areas of Cameroon: Integrating the Global Environmental Concerns with Local Livelihood Needs</b>
Republic of Cameroon	

## I. Project Outline

Background	<p>The vast tropical rainforest of Congo Basin that include the Eastern, Southern and Center Regions of Cameroon is the second largest ones in the world next to Amazon rainforest and known as its biodiversity. The local people in the regions has been traditionally gaining their livelihood by using natural resources and lands thanks to the abundant natural resources from the tropical rainforest. However, shifting cultivation causing deforestation drastically expanded due to the rapid population growth and penetration of agricultural production prioritizing marketability. The deforestation decreased the forest area from 243,000km<sup>2</sup> in 1990 to 199,000km<sup>2</sup> in 2010 (FAOSTAT). Although the government of Cameroon formulated and implemented “the Forest &amp; Environment Sectoral Program (FESP)” in 2003 in order to cope with the deforestation issue, the program did not fully considered possible adverse impacts on living of the local communities and the economic activities in the forest areas by the enforced strict forest protection measures Under those situations, researches on sustainable livelihood strategy and natural resource management was urged in order to realize compatible forest protection and management with the living of the local communities.</p>				
Project Objectives	<p>Through clarification of conditions assuring sustainable agricultural production, processing and marketing to avoid deforestation and cropland expansion, development of local community model for sustainable use of non-timber forest products (NTFPs) and preparation of a guideline for rational and sustainable ecosystem use, the project aimed at proposing methods for sustainable land use and natural resource conservation in forest/forest-savanna margin areas of South Region and East Region of Cameroon.</p> <ol style="list-style-type: none"> <li>1. Expected Overall Goal: N/A</li> <li>2. Project Purpose: Methods for sustainable land use and natural resource conservation are proposed in forest/forest-savanna margin areas of South and East Regions of Cameroon.</li> </ol>				
Project Activities	<ol style="list-style-type: none"> <li>1. Project Site: Youndé, Bityli Village, Ebolowa Area (Southern Region), Andom Village, Bertoua area and Gribé Village, Yokadouma-Ngato Ancien Area (Eastern Region)</li> <li>2. Main Activities: 1) Clarification of conditions assuring sustainable agricultural production, processing and marketing to avoid deforestation and cropland expansion, 2) Development of local community model for sustainable use of non-timber forest products (NTFPs), 3) Preparation of a guideline for rational and sustainable ecosystem use in forest/forest-savanna margin areas.</li> <li>3. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"> <p>Japanese Side</p> <ol style="list-style-type: none"> <li>1) Experts: 26 persons</li> <li>2) Trainees received: 9 persons</li> <li>3) Equipment: Laboratory equipment and apparatus, vehicles, computers, etc.</li> </ol> </td> <td style="width: 50%;"> <p>Cameroonian Side</p> <ol style="list-style-type: none"> <li>1) Staff allocated: 37 persons</li> <li>2) Facilities and land: 3 office rooms in Institute of Agricultural Research for Development (IRAD) in Yaoundé, 1 warehouse in IRAD, land for a field stations in Gribé and Andom, 1 cassava processing factory in Bityli, 3 pilot farms in Bityli (Mé pto, Tyele and Mingon-Mingon) and 4 pilot farms in Andom, Land for 4 cassava drying units in Andom</li> </ol> </td> </tr> </table> </li> </ol>			<p>Japanese Side</p> <ol style="list-style-type: none"> <li>1) Experts: 26 persons</li> <li>2) Trainees received: 9 persons</li> <li>3) Equipment: Laboratory equipment and apparatus, vehicles, computers, etc.</li> </ol>	<p>Cameroonian Side</p> <ol style="list-style-type: none"> <li>1) Staff allocated: 37 persons</li> <li>2) Facilities and land: 3 office rooms in Institute of Agricultural Research for Development (IRAD) in Yaoundé, 1 warehouse in IRAD, land for a field stations in Gribé and Andom, 1 cassava processing factory in Bityli, 3 pilot farms in Bityli (Mé pto, Tyele and Mingon-Mingon) and 4 pilot farms in Andom, Land for 4 cassava drying units in Andom</li> </ol>
<p>Japanese Side</p> <ol style="list-style-type: none"> <li>1) Experts: 26 persons</li> <li>2) Trainees received: 9 persons</li> <li>3) Equipment: Laboratory equipment and apparatus, vehicles, computers, etc.</li> </ol>	<p>Cameroonian Side</p> <ol style="list-style-type: none"> <li>1) Staff allocated: 37 persons</li> <li>2) Facilities and land: 3 office rooms in Institute of Agricultural Research for Development (IRAD) in Yaoundé, 1 warehouse in IRAD, land for a field stations in Gribé and Andom, 1 cassava processing factory in Bityli, 3 pilot farms in Bityli (Mé pto, Tyele and Mingon-Mingon) and 4 pilot farms in Andom, Land for 4 cassava drying units in Andom</li> </ol>				
Project Period	July 2011 – July 2016	Project Cost	Ex-ante: 400 million yen Actual: 404 million yen		
Implementing Agencies	Ministry of Scientific Research and Innovation (MINRESI), Institute of Agricultural Research for Development (IRAD), University of Dschang, University of Douala, University of Yaoundé I				
Cooperation Agency in Japan	Kyoto University, Tokyo University of Agriculture, Shizuoka University, Tenri University, Kyoto Prefectural University, Notre Dame Seishin University				

## II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

[Expected Overall Goal and Utilization of Research Outcomes]

Since the expected Overall Goal for the SATREPS project was not set by the project design, expected “Utilization of the research outcomes” was verified by this ex-post evaluation as a part of expected positive impacts by the SATREPS project.

### I Relevance

<Consistency with the Development Policy of Cameroon at the Time of Ex-Ante Evaluation >

The Project was consistent with Cameroon’s policies to prioritize sustainable natural resource management, such as the “Growth and Employment Strategy Paper (GESP)” (2010-2020), the “Rural Sector Development Strategy (RSDS)” (2005-2015) and the “Forest Environment Sector Program (FESP)” (2003).

<Consistency with the Development Needs of Cameroon at the Time of Ex-Ante Evaluation>

The Project was consistent with Cameroon’s development needs for sustainable natural resource management in order to cope with deforestation due to agriculture and to ensure the livelihoods of the rural people depending on the forests.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

<sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

The Project was consistent with Japan's ODA Policy for Cameroon, prioritizing support for forest conservation as a countermeasure against climate change<sup>2</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. "Forest-Savanna Sustainability Model" was presented to annual meeting of Japan Association for African Studies in Japan, in early June 2016. The model proposed the methods for sustainable land use and natural resource conservation are proposed in forest/forest-savanna margin areas of South and East Regions of Cameroon based on the research outputs though the planned outputs such as guidelines for sustainable agricultural production and for rational sustainable ecosystem use, sales system model based on cost calculation of cassava production and marketing and local community model for sustainable use of NTFPs were not developed.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued since project completion. Most of the research outputs by the SATREPS project have been utilized by the researchers and the local producers. For example, while "Handbook for the Investigation on Indigenous Alcoholic Beverages Production" has been used by the local producers, "Model for Sustainable Animal Use", "NTFPs Mapping at Project Site" and "Organic Matter of Soil Management Model" have been utilized by the researchers. On the other hand, the "Manual for Constructing Contour Ridge (Donou) for Sustainable Cassava Production" was not printed for distribution because of lack of budget and the Aflora database (database of NTFPs) has not yet open to the public because of the problem of its server.

In addition, the researches related to the research outputs by the SATREPS project have been conducted. The new SATREPS project, "Co-creation of innovative forest resources management combining ecological methods and indigenous knowledge (Co-création d'une gestion innovante des ressources forestières combinant les méthodes écologiques et les connaissances autochtones: Projet COMECA) (2018-2023), which has started by IRAD of Cameroon and the Center for African Area Studies (CAAS) of Kyoto University, was initiated and has been conducted for sustainable use of wildlife and NTFPs in the tropical rain forest of Southeast Cameroon by the local people initiative. Also, a grassroots technical cooperation project call, "Cassava Commercialization Project for Small-scale Farmers in the Eastern Region of Cameroon" (2018-2021) has been implemented by using the research output of the SATREPS project under the support of JICA.

The most of major research facilities and equipment installed by the SATREPS project have been utilized. The field stations of Andom and Griblé as well as a cassava processing factory in Bitiyili have been utilized by IRAD. The field stations of Andom and Griblé have been utilized for the grassroots technical cooperation project and the successive SATREPS project of COMECA, respectively. Also, 4 cassava processing units in Andom have been used by the local community. On the other hand, pilot farms in Bitiyili and Andom have returned to the owner as planned and use by them.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The two above-mentioned new projects have promoted the research outcomes of the SATREPS project. "Project COMECA" has utilized the sustainable use of NTFPs to balance conservation of biodiversity and livelihood of the local communities. The grassroots technical cooperation project for the cassava commercialization has utilized the research outcomes related to sustainable agriculture, including production, processing and marketing of cassava for income improvement of the local small-scale farmers. In addition, "the Project for Promotion of Conservation, Sustainable Use of Biodiversity and Climate Change Issues in the Commission of Central African Forest (COMIFAC) Countries<sup>3</sup>" (2015-2020), other technical cooperation project of JICA, has utilized the data of NTFPs commercialization. Furthermore, the Ministry of Science Research and Innovation (MINRESI) has promoted dissemination of the improve cassava varieties over the two divisions in the territory of Diocese.

<Other Impacts at the time of Ex-Post Evaluation>

There are some positive impacts of the Project confirmed at the time of the ex-post evaluation. The SATREPS project contributed to improve accuracy in scientific approach and knowledge as well as respective competence of the researchers through exchanges with the Japanese researchers. In addition, the universities involved in the SATREPS project from the Cameroon side enhanced their research capacity and the educational capacity by the research equipment installed by the SATREPS project.

From the social aspect, the SATREPS project facilitated reduction of subordination between the two ethnic groups of Konabembe and Baka through equal treatment of all the local population by the SATREPS project.

No negative impact by the SATREPS project was confirmed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, both the effectiveness and impact of the project is high.

Achievement of Project Purpose

Aim	Indicators	Results
(Project Purpose) Methods for sustainable land use and natural resource conservation are proposed in forest/forest-savanna margin areas of South and East Regions of Cameroon.	Indicator 1: The acquisition of substantial data for "Forest-Savanna Sustainability Model" and the analysis results are presented.	Achievement Status: Achieved (Continued) (Project Completion) ● "Forest-Savanna Sustainability Model" was presented to annual meeting of the Japan Association for African Studies in Japan, in early June 2016. (Ex-Post Evaluation) ● Most of the research outputs by the SATREPS project have been utilized by the researchers and the local producers.

Source : Terminal Evaluation Report, JST Terminal Report, Questionnaires and interviews with the project Coordinator of IRAD

3 Efficiency

Although the project period was as planned (the ratio against the planned: 100%), the project cost slightly exceeded the plan (the ratios

<sup>2</sup> Ministry of Foreign Affairs, "ODA Country Databook 2010"

<sup>3</sup> The Central Africa Forest Commission. It was established by the Congo Basin Countries including Cameroon in 1999.

against the plan: 101%). The project outputs were produced as planned.

Therefore, the efficiency of the project is fair.

#### 4 Sustainability

##### <Policy Aspects>

There has been no change in the policy priorities to promote the sustainable natural resource management, including forest resources and to protect biodiversity in the Congo Basin. Therefore, it is expected that the researches related to NTFPs production to conserve forest resources will be supported by the government of Cameroon.

##### <Institutional/Organizational Aspects>

The three field stations of Adom, Gribé and Bityili (cassava processing factory) were officially integrated as antennas of IRAD with staff and has been maintained by IRAD. Four researchers of IRAD have been engaged in the research activities related to the SATREPS project. COMIFAC elaborated a guide for management of transboundary protected area (Tri-National Dja-Odzala-Minkébé TRIDOM)<sup>4</sup> and has been planning to sensitize all their stakeholders of COMIFAC countries on the utilization of the guide. MINRESI and IRAD collaborate with *Obala Diocèse* in the city of Obala (Yaoundé Province) for cassava transformation based on the guide developed by the SATREPS project and has followed up a cassava transformation unit.

For promoting the utilization of the research outputs by the SATREPS project, there have been a steering committee which has been composed the Ministry of Agriculture and Rural Development (MINADER) with 10 members for sustainable agriculture, 7 for soil science, 4 for socioeconomic aspects, the Ministry of Forests and Wildlife (MINFOF) with 8 members for forest and NTFPs, the Ministry of Environment, Protection of Nature and Sustainable Development (MINEPED) with 12 members and MINRESI/IRAD with 13 members for the research activities related to the SATREPS project.

As mentioned above, three field stations have been integrated as antennas of IRAD and staffed. IRAD has maintained 7 machines of the food laboratory and 3 machines of the soil laboratory installed by the project. But 1 machine of the food laboratory and 1 machine of the soil laboratory were broken and one of the soil labo was difficult to repair, so IRAD replaced it. University of Dschang has sustained the food laboratory with 5 machines and the soil laboratory with 3 machines. While all the machines of the food laboratory have been functioning well, 2 machines of the soil laboratory were broken and the university has not been able to repair them due do the lack of technician and unavailable spare parts in Cameroon.

In addition, MINRESI has been implementing planned research activities and using the research outputs and the publications by the SATREPS project as a helpful database for scientific literacy.

##### <Technical Aspects>

Some researchers of IRAD and University of Douala have upgraded their research capacities in their respective areas and others have been appointed to a scientific position or have become a doctorate degree holder. In particular, some researchers of IRAD who involved in the SATREPS project have been engaged in the COMÉCA project. A professor of the University of Dschang, as a researcher, improved his capacity through the SATREPS project and has been using his skill to elaborate the guide for the management of transboundary protected area (TRIDOM).

##### <Financial Aspects>

While there has no budget allocation by the government of Cameroon for any research activities related to the SATREPS project, including the COMECA project, IRAD have triennial budget program from 2020 to 2022 for the three field stations. It indicates that a part of running cost for the three field stations, including staff salaries, transport cost and allowances, have been covered.

##### <Evaluation Result>

In the light above, there have been some problems from the institutional aspect. Therefore, the sustainability of the effects through the Project is fair.

#### 5 Summary of the Evaluation

The project was achieved the Project Purpose through the establishment of the “Forest-Savanna Sustainability Model” including the improved cassava production and NTFPs. As for sustainability, the implementing agency has personnel and budget shortages for the research activities related to the SATREPS project. As for efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learnt

#### Recommendations for Implementing Agency:

(for MINRESI/IRAD and University of Dschang)

- Research institutions should ensure that they have the necessary budget and personnel, for example agricultural engineers, extension officers, to maintain the facilities and equipment developed under this SATREPS project in order to continue to provide services to the local population. IRAD should actively lobby the budget authorities to do so.

#### Lessons Learnt for JICA:

- Before selecting equipment, JICA should confirm the infrastructure conditions at the installation site, such as power and water, the availability of repair parts, and the availability of technicians to maintain and operate the equipment.

<sup>4</sup> TRIDOM is a landscape spread over three countries - Cameroon, the Republic of Congo and Gabon. It is a transborder forest covers 178,000 km<sup>2</sup>, representing 10% of the Congo Basin rainforest.



A Cassava processing unit in Andom that continues to be used and maintained by local community