

## Criterion – 7.2 Best Practices

7.2.1 Describe two best practices successfully implemented by the Institution as per NAAC format provided in the Manual

Best Practice 1:

Sustainable Aquaculture Development and Education Programme

Best Practice 2:

Traditional process for the Production of Fermented Food Product of Soya bean  
“Hawaijar”

## **1. TITLE OF THE PRACTICE: SUSTAINABLE AQUACULTURE DEVELOPMENT AND EDUCATION PROGRAMME**

### **2. OBJECTIVE OF THE PRACTICE:**

- To provide practical, hands-on learning experiences for students while promoting sustainable aquaculture practice.
- To provide hands-on educational opportunities and learning experiences for students through community engagement, resource management, understanding one biodiversity and ecosystem management
- To contribute to the economic development of Regional College Lilong Chajing.
- To enhance socio-economic development in the Lilong Chajing region by promoting sustainable aquaculture practices.
- To improve local livelihoods, environmental stewardship.

### **3. THE CONTEXT:**

The National Education Policy emphasizes experimental learning and skill development. The introduction of fish rearing in natural ponds on college campuses aligns with this vision, providing a real-world context for students to apply theoretical knowledge. Lilong Chajing is situated in the Imphal West district of Manipur, and the Imphal River flows through the town. Lilong Chajing has abundant water resources, and the climate is suitable for aquaculture. However, the region faces several challenges, such as outdated farming techniques, lack of access to quality inputs, and limited knowledge of sustainable practices.

As the only college in the region, addressing these challenges can provide educational opportunities to students, improve the livelihoods of local fish farmers, and contribute to the region's overall economic development. Our college, through this programme, aims to bridge the gap between traditional practices and modern, sustainable aquaculture techniques, providing education, training, and support to the students and the local community.

### **4. THE PRACTICE:**

The Sustainable Aquaculture Development and Education Programme of our Institution aims to take up various initiatives. The college has two aquaculture ponds where various fishes have been introduced. Aquaculture studies have been integrated

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into the college curriculum through the NEP SEC syllabus, covering fish biology, water quality management, aquaculture technology, and sustainable practices. Theoretical and practical components have been included to ensure comprehensive learning.

One of the main objectives of our college is to promote Community Engagement. Collaboration with local fish farmers has been done to understand their needs and to provide technical support. The college plans to involve the local farmers in research projects. Faculty and students are continuously encouraged to undertake research projects focused on improving aquaculture practices, enhancing productivity, and ensuring sustainability.

Sustainable Practices such as Water Quality Management and Feed Management have been implemented. This includes regular monitoring and maintaining optimal conditions for fish growth. The use of high-quality, sustainable feed has been promoted to enhance fish health and growth while reducing environmental impact. One of the significant constraints faced was the initial setup cost, which included pond construction, acquiring fish stock, and ensuring the pond's ecological balance. Additionally, maintaining water quality and preventing diseases posed ongoing challenges. To address these issues, partnerships were established with local fisheries departments and aquaculture research institutions, providing technical support and resources.

## **5. EVIDENCE OF SUCCESS:**

- Students acquire new skills and knowledge, leading to improved aquaculture practices.
- Academic performance also improved, with students demonstrating a better understanding of ecological and aquacultural concepts.
- From time to time, the cultured fishes are harvested and provided a sustainable food source for the campus, reducing dependence on external suppliers and promoting food security.
- The project received positive feedback from local communities and stakeholders, highlighting its potential as a model for sustainable practices in higher education.

## **6. PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED:**

### **1. Challenges:**

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- Limited financial resources to sustain the programme.
- Managing water Quality
- Controlling Fish diseases
- Dealing with unexpected climatic changes

## 2. Resources Needed:

- Funding through grants and donations.
- Partnerships with government and non-government organizations.
- Advanced equipment for research and training.
- Increased volunteer and student participation.
- Technical expertise in aquaculture.

## 7. NOTES:

The Sustainable Aquaculture Development and Education Programme at Regional College Lilong Chajing effectively integrates education, community engagement, and sustainable practices to promote aquaculture development in the region. Adopting this best practice in other institutions requires careful planning and collaboration with aquaculture experts. Establishing partnerships with local fisheries and securing funding are crucial steps. It's important to tailor the practice to the specific environmental conditions and educational objectives of the institution. Continuous monitoring and adaptive management strategies are vital to address challenges and ensure the sustainability of the initiative.

This initiative not only enhances students' learning experiences but also promotes environmental sustainability and community engagement, aligning with the broader goals of the New National Educational Policy. Institutions looking to implement similar practices should focus on creating an integrated approach that combines education, research, and practical application for maximum impact.

## 8. FUTURE PLANS:

- Our College Plans to expand the programme to include more training sessions, research projects, and community outreach activities based on feedback and emerging needs.
- The establishment of long-term collaborations with national and international aquaculture organizations for resource sharing and knowledge exchange has been envisioned by our college.
- Continuous Improvement and Regular assessment of the programme's impact to be done and make necessary improvements to ensure its effectiveness and sustainability.

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**PHOTOS:**



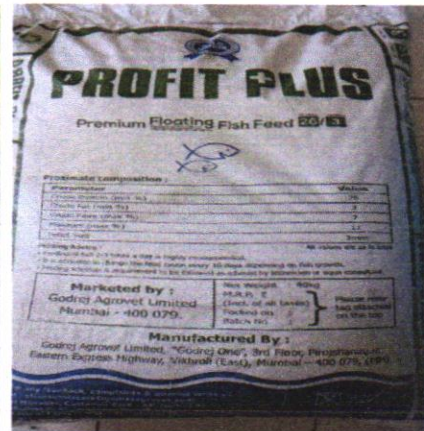
**Fig1: Regional College Pond No.1**



**Fig 2: Regional College Pond No.2**



**Fig 3: Photographs of fish seeds**



**Fig. 4 Photograph of fish feed (Godrej Fish feed:Protein 26 and fat 3)**



**Fig. 5. Release of fish seeds into the pond**



**Fig. Harvesting of fish for institutional purposes.**

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1. **TITLE OF THE PRACTICE: TRADITIONAL PROCESS FOR THE PRODUCTION OF FERMENTED FOOD PRODUCT OF SOYABEAN “HAWAIJAR”**

2. **OBJECTIVE OF THE PRACTICE:**

- To provide practical, hands-on training experiences for students while promoting the traditional process.
- To provide hands-on educational opportunities and learning experiences for students through local markets engagement for understanding the traditional method of fermented process.
- To contribute to the economic development of Regional College, Liliong Chajing.
- To enhance socio-economic development in the Lilong Chajing region by promoting the fermentation practices.

3. **THE CONTEXT:**

The National Educational Policy emphasizes experimental learning and skill development. The introduction of Traditional process for the production of fermented food which is known as “Hawaijar” by Botany Department of the College ensures an application of theoretical knowledge to the students.

Hawaijar is an indigenous traditional fermented food product of soyabean with a characteristic flavour, stickiness and slightly pungent smell. It has unique flavour with suppled but not very soft in texture. It is consumed commonly in the local diet as a low-cost source of high protein food and plays an economic, social and cultural role in Manipur, India. Hawaijar making provides an income to rural masses of Manipur valley. There is an intent to upgrade the status to increase its marketability and profitability.

In North-Eastern India, a variety of non-salted fermented soyabean foods are consumed by ethnic people of the region known by different local names- Kinema in Darjeeling hills and Sikkim, Turangbai in Meghalaya, Hawaijar in Manipur, Aakheni in Nagaland, Bekagum in Mizoram and Pruyaan in Arunachal Pradesh.

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Traditionally, hawaijar is produced by ladies of Meitei Brahmin families in Manipur. Every locality in Manipur has one or two producers of hawaijar. These producers sell the final products in their surrounding areas. However, it can be noted that all Meitei ladies learn the art from generation to generation. They usually prepare hawaijar at their home for their own consumption when in need.

Hawaijar is an intricate part of diets and food culture of Manipur. Besides being a taste enhancer and condiment, it also serves as cheap source of protein in the traditional diets. It is consumed fresh by mixing with king chilly, salt and onion as side dish along with other traditional dishes and steam rice. It is specially used in unique dish 'chagempomba' prepared with rice grains, vegetables and fish, a prize delicacy in Manipur. It is used as fish substitute in traditional dishes when fish or meat is not permitted due to religious or other reasons. Thus, routine production and sale of hawaijar is a source of additional income to rural woman in Manipur that in turn help the socio-economic position of rural households.

Our college through this programme, aims to bridge the gap between traditional and modern practices providing education, training and support to the students and the community.

#### 4. THE PRACTICE:

- Traditional method of Hawaijar preparation involves soaking small seeded soyabeans for 12 to 24 hours.
- It is cooked for 1 hour till the soyabeans get cooked. It is then washed with hot water.
- It is then packed tightly in a small bamboo basket layered with *Ficus hispida* (local name 'Asse heibong) or banana (*Musa spp*) leaves.
- The baskets are incubated in a warm room after covering with gunny bags for maintaining above ambient temperature.
- The palatable stage of fermented soyabean will be noticed within 2 to 5 days.
- Characteristic: Hawaijar odour and mucilage fibre production are the indicator of good quality products with dark brown colour.

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**5. PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED:**

- **Challenges-**

- a. Limited financial resources to sustain the programme.
- b. Managing the quality of the seeds.

- **Resources needed –**

- a. Funding through donation.
- b. Advanced equipment for research and training.
- c. Increased volunteer and student participation.

**6. NOTES:**

The program of the traditional processing of the fermented food product 'Hawaijar' at Regional College Lilong Chajing effectively integrates education, local markets to promote knowledge of entrepreneurship among the students. Adopting this best practice requires careful planning and collaboration with the local markets that provides certified soyabean seeds for the fermentation process. This initiative not only enhances learning experiences of the students but also promotes relationship with the local markets, aligning with broader goals of the National Educational Policy.

**7. FUTURE PLAN:**

- Our college plans to expand the programme to include cultivation of soyabean at the field located in the Regional College, Lilong Chajing.
- Continuous improvement and regular assessment of the programme's impact to be done.
- Necessary improvement should be made to ensure its effectiveness and sustainability for the production of traditional fermented food product of soyabean 'Hawaijar'.

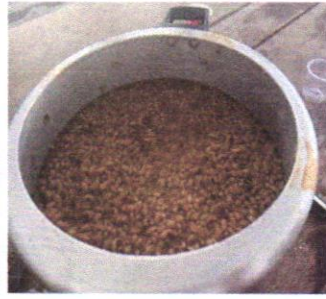
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**Soyabean Fermentation (Hawaijar) Photos:**



**Fig 1: Cooking preparation**



**Fig 2: Cooked soyabean**



**Fig 3: Removal of cooked soyabean**



**Fig 4 & 5: Transferring soyabean to bamboo basket to initiate fermentation process**



**Fig 5: Incubation of soyabean**



**Fig 6: Fermented soyabean**



**Fig 7: Packed fermented soyabean**



**Fig 8, 9 & 10: Gifting of packed soyabean to the Principal, Secretary and the local people**

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