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Taiwan leads collaborative efforts for equitable carbon credits and sustainable rural development in Asia

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As global attention intensifies ahead of the 30th United Nations Climate Change Conference (COP30), Taiwan's Syuejia Districtâ??s sorghum contract-farming program has announced major progress in positioning Taiwanâ??s rural landscapes as climate solutions.

The Syuejia Plain in Tainan, once part of the historic Tao-Feng Inland Sea and now a **coastal agricultural region**, is a key area for climate adaptation and sustainable rural development in Asia. Traditionally reliant on garlic and shallot farming, the region faces soil challenges like low organic matter, poor water and nutrient retention, and compaction, which impact carbon stability. Improving soil aggregate structure is crucial for enhancing long-term carbon sequestration.

The initiative aligns with the **Global Declaration for Equitable and Ethical Carbon Credit Practices**: An Action Framework for Caring for Our Common Home, which calls for just, transparent, and community-centered approaches to carbon credit development. Syuejiaâ??s model is also aligned with the Kunmingâ??Montreal Global Biodiversity Framework (KMGBF) and the high standards of the UNFCCCÂ Clean Development MechanismÂ (CDM).

The Syuejia Farmersâ?? Association is committed not only to generating high-quality carbon credits but also to ensuring that revenue is directly returned to participating farmers, reinforcing fairness and justice in rural climate-market participation. This farmer-centered approach strengthens trust, enhances social sustainability, and provides a pathway for rural regeneration.

With its distinctive combination of traditional Asian farming knowledge, scientific monitoring, and UN-aligned governance, Syuejia is positioning itself as a new model for climate-ready rural landscapes in Asia. As climate change accelerates and global carbon markets evolve, Syuejiaâ??s sorghum initiative stands as a milestone in advancing ecological restoration, rural economic resilience, and community-driven carbon sequestration in Taiwan and beyond.

Prof. Yen-Hsun Su added that findings from this on-site investigation will be submitted to UN agencies as an exemplar of integrating ecological conservation, agricultural production, community livelihoods, and carbon management within Asian rural contexts.

Dr. Chen-Pio Yen of the New Agriculture Cooperative highlighted that Syuejia demonstrates how local governments, academic institutions, farmersâ?? associations, and farming communities can co-create a world-class sustainability model. The collaborative approach offers a replicable and verifiable framework for climate adaptation and mitigation, particularly relevant during the global climate discussions at COP30.

New Agriculture Cooperative evaluate ecological outcomes:

Syuejia District Chief Ming-Pao Chang and Syuejia Farmers' Association General Manager Hsiao-Chun Lee, along with the UNU-IAS/IPSI-endorsed Satoyama Mace Initiative research team led by Prof. Yen-Hsun Su of National Cheng Kung University and the New Agriculture Cooperative led by Dr. Chen-Pio Yen, conducted a field investigation in Syuejia this week. The visit aimed to evaluate ecological outcomes and assess the long-term carbon benefits of the initiative.

General Manager Hsiao-Chun Lee explained that the Farmersâ?? Association has partnered with Kinmen Kaoliang Liquor Inc. for many years to promote sorghum rotation and contract farming. This approach significantly **reduces methane emissions, enhances soil carbon stocks, and strengthens regional climate resilience.** Despite delays caused by the extended maize harvests this year, the sorghum program maintained a stable operational scale of 736 hectares across the Yunlin, Chiayi, and Tainan regions. Sorghum has thus emerged as a climate-adaptive and economically viable crop for farmers facing shifting environmental conditions.

District Chief Ming-Pao Chang emphasized that Syuejia is not only an **agricultural production zone** but represents a **Social-Ecological Production Landscape and Seascape (SEPLS)** that integrates ecology, livelihood, and production. During carbon assessments conducted in summer 2024, researchers confirmed that sorghum rotation supports biodiversity, strengthens soil carbon sequestration, and contributes to long-term landscape resilience.

â??By enhancing the quality and value of carbon credits, we aim to increase farmersâ?? income while achieving a triple-win vision of ecological conservation, improved livelihoods, and sustainable production.â? siad Chang.