

CAO Success Story: Wood Vinegar & Biochar



In the floodplains of Sdau Commune, Kampong Cham Province, a quiet but powerful transformation is underway. Spearheaded by the native Commune Agricultural Officer (CAO) Tho Sophal, local farmers are breaking free from the cycle of ever more expensive chemical inputs and discover the rich potential of organic farming.

Home to a population of 4,906, Sdau Commune sits on the banks of the Mekong River. Here farmers rely on flood recession rice cultivation. But rising input costs have made survival difficult. And the impact of the war against Iran is felt locally already (April 2026): pushing a single bag of Urea fertilizer from 105,000 KHR to as high as 150,000 KHR, and the rental prices for harvesters are following rising diesel costs upwards. Farmers see their profits vanish.

CAO Tho Sophal offered the farmers technological innovations to cut input costs whilst maintaining high yields: replacing chemical fertilizer with biochar for soil health (see picture above) and applying organic wood vinegar – a by-product of biochar production: ទឹកផ្កាអម្រឹត – for pest control.

Farmer Vaeng Vi became her first champion. On his 90 acres, he replaced the previously used 600 kg of chemical fertilizer (costing 1,260,000 KHR) with just 200 kg of chemicals plus 200 kg of biochar and reduced the amount of seeds by half. The result? His input costs dropped by one third, from over 1.2 million KHR to just 820,000 KHR and his yield jumped from 5 to 6 tons. Moreover, the superior organic quality allowed him to sell his harvest locally for up to 1,200 KHR per kg – far above this season’s market standard of 720 KHR.

Other farmers become interested and are now keen to follow. In fact, after witnessing Vi’s success, more than ten additional farmers have expressed interest in joining the innovative program next season. The model proves itself: reduced seeds from 300 kg to 150 kg, fewer pesticide sprays, stronger plants, and healthier soils.

Buoyed by this success, CAO Tho Sophal is now laying the groundwork for a local cooperative. Her vision is to scale up production of organic Saen Kro’ob using biochar and wood vinegar – not just for local tables, but for export.

Thanks to one dedicated agricultural officer, Sdau Commune is no longer just surviving the seasons – it is thriving, organically. “Good CAOs know their neighbors, understand their commune” Tho Sophal – a local from Sdau – says with a smile, “Thus, farmers thrive. Livelihoods get better.”

And just as Tho Sophal is serving her commune many more local CAOs are doing the same across the country. Now each and every Cambodian agricultural commune is supported by this entirely new generation of young and well educated CAOs—of which about 40 % are women. And they are out in the field, close to the farmers and ready to collaborate with Development Partners and their programs.

CAOs – An Opportunity for Development Partners for Cooperation

The CAO’s continuous presence at grass roots level helps in supporting:

- **Timely and specific advice on rice cultivation**
- **Higher yields by measured quality inputs and precise field management**
- **Improved nutrition management with blended fertilizers**
- **Trust building with farmers for more cooperative and resilient communities.**



**Ministry of Agriculture,
Forestry and Fisheries**

Wood Vinegar and Biochar

Background: The 6th Priority Policy of the Royal Government of Cambodia:

In the current 7th legislative term, the Royal Government of Cambodia (RGC) embarks on the ambitious endeavour to create a stable and sovereign framework for future agricultural growth. With the 5th and the 6th Priority Policy the Government promotes production, marketability and price stability for agricultural products, establishes a nationwide network for agricultural extension by deploying Commune Agricultural Officers (CAOs) all over the country, and develops Modern Agricultural Cooperatives (MAC).

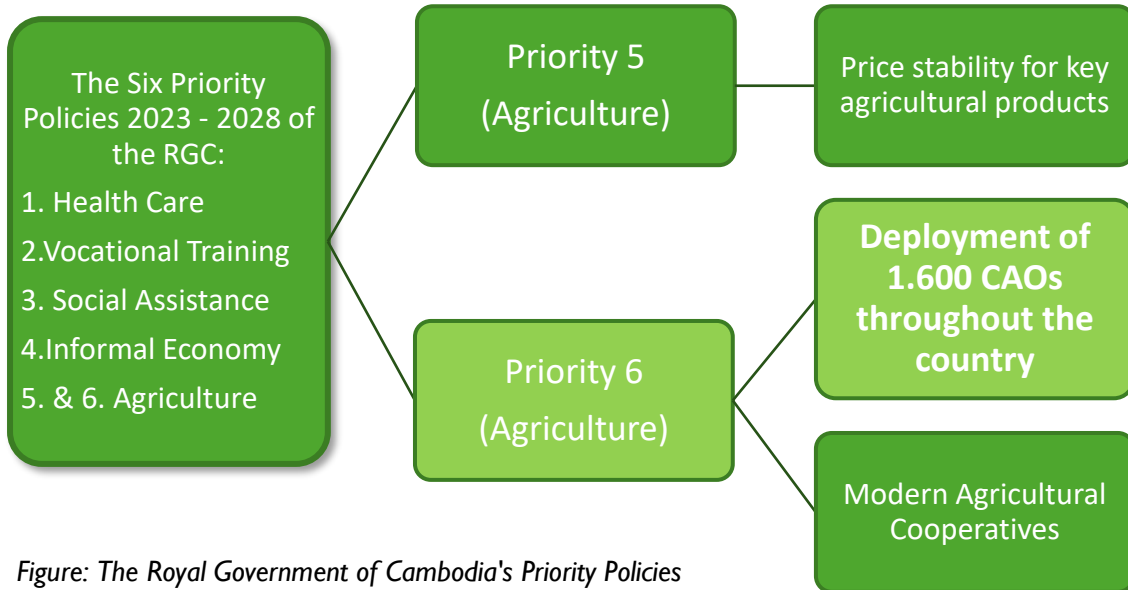


Figure: The Royal Government of Cambodia's Priority Policies

Within the 6th Priority Policy, a nationwide agricultural extension structure aiming for a total of 1.600 Commune Agricultural Officers (CAOs) covering each and any agricultural commune in the country is envisaged. And the structure is already taking shape: A first group of 250 CAOs (93 Women) started in early 2024 and a second group of 1.000 CAOs has been deployed early 2025. By October 2025 all 1.600 CAOs are in service.



Wood Vinegar and Biochar as used in Sdau Commune

