

CAO Success Story

Applied Research Saving Pepper Farmers



When fungal disease swept through pepper farms in Rong Commune after the rains of October 2025, many farmers turned to chemical fungicides. Among them was 55-year-old Ms. Nut Om from Trapeang Russey village, who had spent years carefully tending her 550 pepper vines. Despite the fungicides, this time the disease continued to spread due to exceptional rains. Leaves turned yellow and developed black spots, roots weakened, and healthy vines began to die. Her livelihood was at risk. The turning point came when Commune Agricultural Officer (CAO) Nhem Samphors visited the farm. As a university-trained agronomist, Ms. Samphors approached the problem differently. Rather than recommending another chemical treatment, she first observed the field conditions, examined the symptoms on both the leaves and root system, and considered how the prolonged wet conditions had encouraged fungal development.

Based on her technical knowledge and practical field experience, Ms. Samphors recommended using wood vinegar — a natural by-product of biochar production — as part of an integrated disease management approach. She explained the correct dilution rate of one liter of wood vinegar in 200 liters of water, demonstrated how to combine foliar spraying with root application, and advised clearing weeds to reduce moisture. Rather than providing a one-time recommendation, she returned to monitor the farm and guide the treatment through three applications, adjusting her advice based on progress. The results were visible within weeks. After the first treatment, the disease stopped spreading. By the second application, nearly all affected vines had recovered, with leaves returning to a healthy green and an estimated 98 percent recovery rate. For Ms. Nut Om, it also restored her confidence in science and evidence-based advice.

The economic impact was equally significant. The recovered pepper vines produced around 500 kilograms of pepper, generating a profit of approximately 10.84 million Riel—an increase of 1.12 million Riel compared with the previous year. Even more importantly, the intervention prevented an estimated loss of more than 5.5 million Riel that would likely have occurred had the disease continued unchecked.

The success quickly spread beyond one farm. Neighboring pepper growers, having seen the recovery with their own eyes, began adopting the same approach. The demonstration showed that locally available, environmentally friendly solutions can be highly effective. By combining scientific knowledge with regular field visits, careful diagnosis, and practical coaching, CAO Nhem Samphors helped a farmer avoid significant losses.

And just as Nhem Samphors 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 crop cultivation**
- **Evidence based advice for farmers.**
- **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).

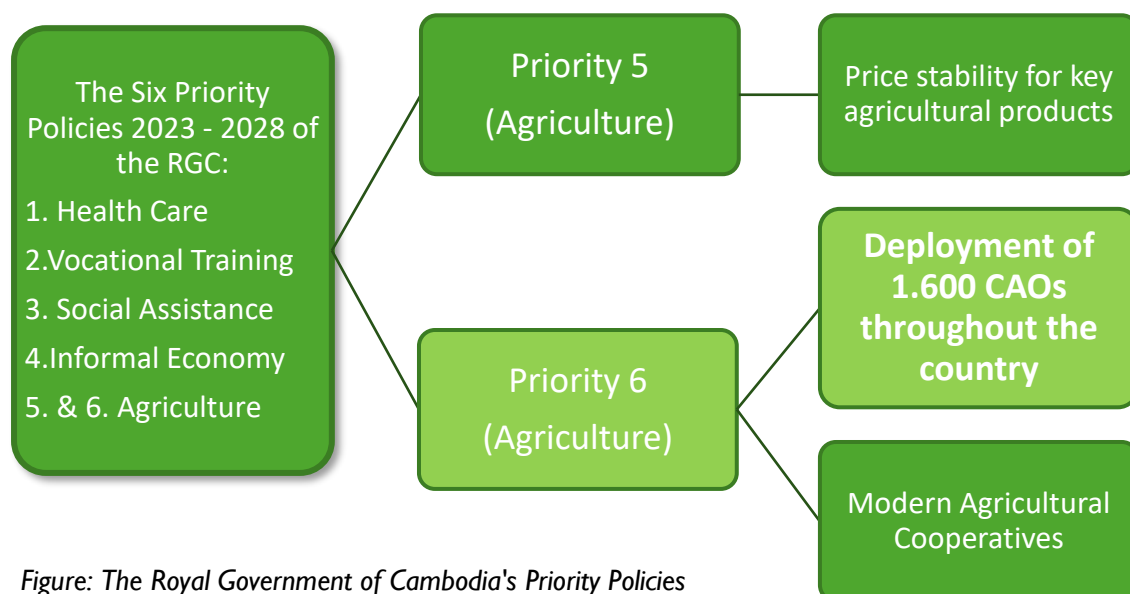


Figure: The Royal Government of Cambodia's Priority Policies

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.



<CAO Nhem Samphors on the pepper farm

>Wood Vinegar

