

Voluntary Report – Voluntary - Public Distribution

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Report Name: Cross Border River Contamination Impacts Agriculture in Northern Regions

Country: Thailand

Post: Bangkok

Report Category: Agricultural Situation, Sanitary/Phytosanitary/Food Safety

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Report Highlights:

Since March 2025, heavy metals have been detected in rivers entering Chiang Rai Province, raising concern for irrigation across an estimated 133,000 rai (21,317 hectares) of farmland and drinking water for about 14,000 households. However, monitoring shows a mixed picture: elevated arsenic in river sediment and water, but all recent food and tap-water samples within safety standards. Thailand has confirmed treated water is safe, committed funding to relocate its raw water source, and expanded international cooperation with Japan, UNIDO, Australia, and China.

Disclaimer: This report contains assessments of commodity and trade issues made by USDA staff and not necessarily statements of official U.S. government policy.

This report draws on official Thai government monitoring data, public statements by Thai government officials, civil society and community proposals, and independent media reporting; sourcing is noted throughout.

I. Summary of Water Contamination Concerns

Since March 2025, the Chiang Rai Provincial Waterworks Authority (PWA) has detected heavy metals in raw water drawn from rivers that enter Thailand from Burma. The affected rivers irrigate approximately 133,231 rai (21,317 hectares) of cropland in Chiang Rai Province, supply PWA systems serving about 14,436 households, and support capture fisheries and riverside businesses.

Table 1. Timeline of Key Events

<i>Date</i>	<i>Event</i>
<i>March 2025</i>	PWA first detects heavy metals in raw water from rivers entering from Burma
<i>April 2025 onwards</i>	Riverside raft restaurants on the Kok River cease operations
<i>October 3, 2025</i>	House subcommittee meets with DOAE, TFDA, DMSc, and Central Laboratory on rice-testing plan
<i>April 2026</i>	UNIDO/PCD Phase 1 program begins (runs through March 2027); working group monitoring test results last meets
<i>April 21, 2026</i>	UN human rights special procedures send urgent letters to Thailand, China, Burma, and private enterprises
<i>May 18–20, 2026</i>	Eighth-round food-chain surveillance sampling (46 samples, all within standards)
<i>Early June 2026</i>	Community proposal submitted (June 5); journalists six-day march documents 542 audio entries from affected communities
<i>June 16, 2026</i>	PWA tests show heavy metals below standard at all five production stations
<i>June 23–24, 2026</i>	Subcommittee session with MNRE/MFA; subcommittee chair's public statement on river contamination

Date Event

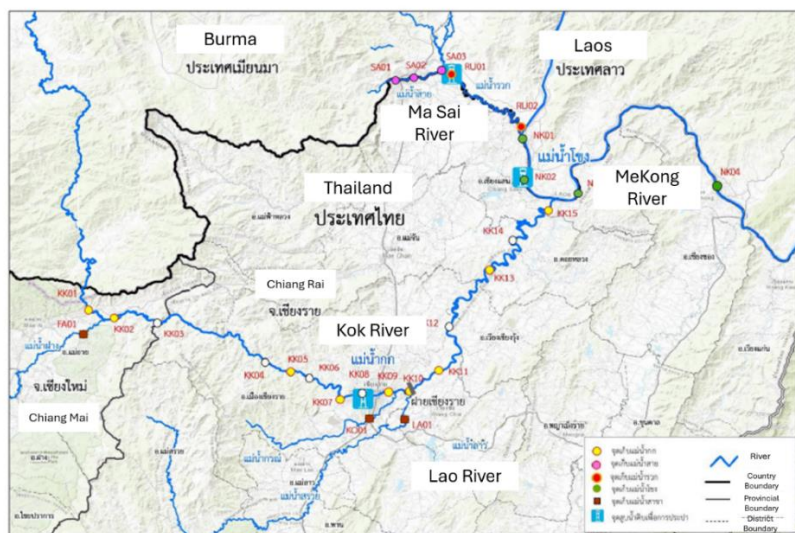
July 12, 2026	PWA press briefing confirms tap water safety, announces FY2027 budget request
July 16–17, 2026	UNIDO/PCD delegation visits Chiang Mai and Chiang Rai; inspects Ban Mueang Ngim filtration system

Regarding river conditions, the chair of the House Subcommittee on Transboundary Water Pollution stated on June 24, 2026, that arsenic in Mekong sediment in the northern reaches exceeds safe values by more than 30 times and that arsenic in the Salween River exceeds criteria by five times.

On food and water safety, the Chiang Rai Provincial Public Health Office reported that all 46 samples of village tap water, aquatic animals, and vegetables and fruits collected May 18–20, 2026 in its eighth round of surveillance met Ministry of Public Health standards for arsenic, lead, cadmium, and mercury. On July 12, 2026, PWA confirmed tap water safety at all five Chiang Rai production stations. The PWA also stated its FY2027 budget request of 2,248 million baht (\$69 million)¹ will include provisions to move raw water intake from the heavily polluted Kok River to the Lao River.

On July 16–17, 2026, a United Nations Industrial Development Organization (UNIDO) delegation and the Pollution Control Department visited Chiang Mai and Chiang Rai to begin an arsenic management program supported by Japan, with Australia and China also engaging in monitoring and policy cooperation.

Picture 1. Tributaries of the Mekong River in Chiang Rai province



Source: Pollution Control Department, Ministry of Natural Resource and Environment

¹ Bank of Thailand; Exchange rate June 2026: \$1 = 32.74 baht.

II. Monitoring Results

River Water and Sediment

As reported in the press, on June 24, 2026, a member of Parliament for Chiang Mai and chair of the Subcommittee on Transboundary Water Pollution under the House Committee on Disaster Prevention and Mitigation made a public statement citing the following findings:

- Arsenic in the Kok and Sai rivers has exceeded safety standards since the problem emerged.
- Arsenic in riverbed sediment of the Mekong's northern reach now exceeds safe values by more than 30 times.
- Fish sampled from the Mekong in Loei Province contain arsenic and lead above safe values.
- Arsenic in Salween River water in Mae Hong Son exceeds criteria by five times.
- Turbidity in the Kraburi River in Ranong has reached levels classified as severely harmful to aquatic animals.

Food Chain and Village Tap Water

Official food-chain surveillance shows a different picture. The Chiang Rai Provincial Public Health Office, with the Regional Medical Sciences Center, Chiang Rai, the Chiang Rai Provincial Administrative Organization, and local agencies, collected 46 samples on May 18–20, 2026 across the Kok, Sai, Ruak, and Mekong basins in its eighth surveillance round of FY2026. The samples comprised 21 village tap water samples, 10 aquatic animal samples, and 15 vegetable and fruit samples, each analyzed for arsenic, lead, cadmium, and mercury. All 46 samples met Ministry of Public Health standards, with no exceedances recorded for any of the four metals (Table 1). The office stated it would continue surveillance and monthly communication and advised the public to use water from safe or treated sources, wash produce before eating, cook food thoroughly, and follow official updates.

Table 2. Eighth-round heavy metal surveillance results, Chiang Rai Provincial Public Health Office, samples collected May 18–20, 2026

Sample type	Samples	Within MOPH standards	Exceedances (As, Pb, Cd, Hg)
Village tap water	21	100 percent	0 for all four metals
Aquatic animals	10	100 percent	0 for all four metals
Vegetables and fruits	15	100 percent	0 for all four metals
Total	46	100 percent	

Source: Chiang Rai Provincial Public Health Office, samples collected May 18–20, 2026

Read together, the river-environment findings and the food-chain results in Table 1 are not contradictory; they use different monitoring at different locations. Elevated arsenic in river water and sediment indicates an ongoing environmental load, while the passing results for tap water, aquatic animals, and produce reflect conditions in the sampled distribution systems and markets during May 2026. Continued rounds of both types of monitoring will show whether the environmental load reaches consumers over time.

III. Impact on Agricultural Production

Irrigated Cropland

A June 5, 2026, community proposal states that farmers use water from the Kok, Sai, Ruak, and Mekong rivers to cultivate 130,000 rai (20,800 hectares) in Chiang Rai Province, growing rice, sweet corn, feed corn, potato, garlic, shallot, mango, banana, vegetable soybean, green bean, okra, and garden vegetables for domestic sale and export. The proposal requests a replacement irrigation source for this full area, compensation for farmers who must change crops in fields where soil tests exceed heavy metal standards, and soil rehabilitation in contaminated areas. The compensation request indicates that exceedances have been found in some fields. Post has not obtained official soil survey results, sampling locations, or measured values, and no agency has published an estimate of the affected planted area.

Official Crop Monitoring

A government program to test rice for heavy metals is underway. On October 3, 2025, the House subcommittee met with the Department of Agricultural Extension (DOAE), the Food and Drug Administration (TFDA), the Department of Medical Sciences (DMSc), and Central Laboratory (Thailand) Co., Ltd. The meeting covered:

- Surveillance mapping of agricultural areas in the Ruak and Kok basins;
- Data on main-crop rice planting areas in the Kok, Sai, Ruak, and Mekong basins and their tributaries; and
- A testing plan for heavy metals in wet-season rice in Chiang Mai and Chiang Rai provinces, including target areas and budget.

The subcommittee resolved that DOAE:

- Display sampling results on a Google Maps interface;
- Complete sample collection before farmers harvest; and
- Direct the Chiang Rai and Chiang Mai provincial agricultural offices to engage Central Laboratory (Thailand) for residue analysis.

The fifteen vegetable and fruit samples that passed in the provincial health office's May 2026 surveillance round provide an early food-chain indicator. The DOAE rice results, once published, would give the first field-level picture for the region's staple crop.

Fisheries and Aquatic Foods

Provincial advisories caution against consumption of fish and aquatic animals from the affected rivers, and the community proposal requests advisories that specify species, locations, and quantities and that address vulnerable groups. The ten aquatic animal samples in the May 2026 provincial surveillance round met standards, while the subcommittee chair reported Mekong fish in Loei Province with arsenic and lead above safe values. The two statements concern different sampling locations and dates. In Ranong Province, media reporting states that heavy metals have been detected in Kraburi River water and in shrimp at levels below thresholds of concern, alongside elevated turbidity.

IV. Impact on Livelihoods

Riverside raft restaurants on the Kok River ceased operations in 2025. The community proposal requests compensation for these operators but does not state their number or losses.

During a six-day march in early June 2026, journalists from local outlets Transborder News, the Rak Mae Kok network, and Lanner recorded 542 audio entries from more than 60 participants on the water situation. These entries included accounts from fishers and farmers describing lost sales, as well as households purchasing bottled water in place of river-fed supplies.

For household water, PWA draws Kok River water for approximately 40,000 households in Mueang Chiang Rai and Wiang Chai districts, and Sai, Ruak, and Mekong water for approximately 30,000 households in Mae Chan, Mae Sai, Chiang Saen, and Chiang Khong districts. The community proposal further identifies 11 villages in Mae Na Wang and Tha Ton subdistricts, Mae Ai District, Chiang Mai Province, and 7 villages in the Salween basin, Mae Hong Son Province, that need new water sources.

Village-level treatment has begun in at least one location. An arsenic filtration system for village tap water is now operating at Ban Mueang Ngim, Rim Kok Subdistrict, Mueang Chiang Rai District, a flood-affected community whose water supply was contaminated. The UNIDO delegation, together with the Chiang Rai Provincial Administrative Organization, inspected the system on July 17, 2026.

V. Government Response and International Cooperation

At a July 12, 2026, press briefing at the Wang Kham water production station, PWA Governor Chakkraphong Khamchan, appearing with Chiang Rai Governor Chucheep Pongchai, stated that PWA has intensified water quality control since March 2025, invested more than 26 million baht (\$0.79 million) in chemical dosing systems and process improvements in Chiang Rai and Chiang Mai, and sends monthly tap water samples to external laboratories. He reported that on June 16, 2026, tests at all five Chiang Rai production stations showed all heavy metals below standard values.

PWA Governor Khamchan also confirmed a FY2027 budget request of 2,248 million baht, comprising 1,953.088 million baht (\$60 million) for system expansion and 295 million baht (\$9 million) for water loss reduction, to build a new Mae Lao production station during 2027–2029, replacing the Wang Kham station. The new station will have a capacity of 4,000 cubic meters per hour, serving approximately 80,000 users in Mueang Chiang Rai, Wiang Chai, and Mae Lao districts.

The international program announced by the government began field work in mid-July. On July 16, 2026, a delegation led by Dr. Fukuya Iino, UNIDO Representative in Thailand, with Pollution Control Department (PCD) officials, visited the Research Institute for Health Sciences laboratory at Chiang Mai University. On July 17, the delegation met the Chiang Rai Deputy Governor Prasert Jitpleecheep at the provincial hall and inspected the Ban Mueang Ngim village arsenic filtration system.

The program will have three work streams:

- An integrated action plan;
- A citizen surveillance network supported with contaminant test kits; and
- Identification of treatment technologies for tap water, household use, and agriculture.

The first phase runs for one year, from April 2026 to March 2027, and centers on a study of arsenic movement in a pilot area at Tha Ton Subdistrict, Mae Ai District, Chiang Mai, leading to an action plan. A proposed next phase would extend coverage to all of Chiang Mai and Chiang Rai provinces, distribute arsenic test kits, and apply arsenic removal technology presented by Japan. Japan International Cooperation Agency (JICA) plans to begin joint training next year for officials from Thailand, Burma, and Laos, so that agencies in the three countries monitor the same rivers with the same equipment, methods, and standards, replacing the current mix of differing equipment and approaches.

UNIDO/PCD also stated that cooperation is also proceeding with Australia through the Australian Water Partnership on long-term monitoring systems, and that Japan, China, and Australia are engaging proactively on transboundary pollution management. He stated that China has expressed readiness to support Thailand and Burma in establishing a joint inspection committee on pollution and heavy metal contamination, and to deepen water resource and ecosystem cooperation with Mekong countries under the Mekong-Lancang Cooperation framework, including water data sharing.

VI. Parliamentary Oversight and International Engagement

The House of Representatives established the Subcommittee on Transboundary Water Pollution under its Committee on Disaster Prevention and Mitigation. The subcommittee has convened agencies including the Pollution Control Department, the Department of Mineral Resources, the Department of Primary Industries and Mines, and DOAE. At the executive level, a national committee chaired by Deputy Prime Minister Songsak Thongsri oversees working groups on the issue.

According to the subcommittee chair's statement published on June 24, following a subcommittee session with the Ministry of Natural Resources and Environment (MNRE) and the Ministry of Foreign Affairs (MFA):

- The working group on international negotiations has not yet been convened;
- The working group monitoring test results had last met in April 2026; and
- One round of talks had been held with Burma without further progress.

Deputy Prime Minister Thongsri called for multilateral negotiations among Thailand, China, Burma, and Laos. He also stated that United Nations human rights special procedures sent urgent letters on April 21, 2026, to the governments of Thailand, China, and Burma, and to private enterprises, regarding the mining impacts.

Picture 2. Sai River Along Thailand-Burma Border Taken During Chiang Rai Crop Surveys on May 11-12, 2026



Attachments:

No Attachments.