From Flies to a Food Waste Loop

Mae Wang National Park, Thailand
Freelance
Protected Areas (including public natural or cultural parks)
Nature & Environment

Summary of Good Practice Story

Mae Wang National Park in Chiang Mai, Thailand — a Green Plus award-winning park known for waterfalls and camping — saw growing fly infestations and odours around its campsite as camping popularity increased, and an initial fix of restricting cooking to designated areas failed because tents were spread up to 200 metres away on sloped terrain. The park instead redesigned the whole system: campers register and borrow a deposit-refund food-waste separation bin, separate solid scraps from liquids at their own tents, and staff collect the bins daily for processing into compost (via underground composting tanks) and animal feed, closing the loop entirely within the park rather than trucking waste out. Between December 2025 and February 2026 the park processed 189.4 kg of solid food scraps, with flies and odours dropping sharply and reduced reliance on chemical pest control, and the model has since been presented to national park executives across northern Thailand's Protected Area Regional Office 16 for wider adoption. The key lesson: rather than simply asking visitors to be more responsible, destinations should redesign systems so that responsible behaviour becomes the easiest choice.

Setting the Scene: Destination & context

Located in the mountainous landscapes of Chiang Mai, northern Thailand, Mae Wang National Park is known for its waterfalls, forest ecosystems, and nature-based camping experiences.

Welcoming thousands of visitors each year, it has become a popular destination for outdoor recreation and environmental learning. Mae Wang's commitment to sustainability was nationally recognized in 2022 when it received Thailand's highest-level Green National Park Award (Green Plus Category G), reflecting excellence in environmental management, visitor services, and waste management efforts. However, as camping grew in popularity, food waste generated by visitors began attracting flies, creating odors, reducing visitor comfort, and increasing management challenges. Like many protected areas worldwide, Mae Wang faced the need for a sustainable solution. Rather than treating flies as the problem, the park addressed the root cause: food waste. This led to the development of the Mae Wang Food Waste Loop, a practical circular tourism model that transforms campsite food waste into a managed resource while engaging visitors as active partners in conservation. Today, the model is being shared with other protected areas across northern Thailand.

The Turning Point: Why change was needed

During peak tourism seasons, flies became increasingly noticeable around the campsite. The problem was not nature itself, but the way food waste was managed. The park initially tried to address the issue by restricting cooking to designated areas, expecting food waste to be easier to control. However, campsite conditions made this difficult. The campfire area accommodated about 20 people and the roofed cooking area about 6 sufficient in the past, but inadequate as visitor numbers grew. Some tents were located up to 200 meters away on sloped terrain. For campers wanting to cook near their tents, carrying ingredients, utensils, and waste back and forth was inconvenient. Some visitors were dissatisfied, while crowded cooking areas still resulted in food scraps being dropped and flies remaining a problem. This first attempt became an important lesson. The park realized the issue was not where visitors cooked, but how food waste was separated, collected, and processed from the start. A solution that seemed practical on paper did not fully match camper behavior or the campsite layout. The question shifted from “How can we stop visitors from creating food waste?” to “How can we help visitors manage food waste correctly while still enjoying the camping experience?” That change in thinking marked the beginning of the Mae Wang Food Waste Loop.

The Vision: What you set out to do

Mae Wang National Park developed a food waste management system that is simple, practical, low-cost, and suited to real campsite conditions. The goal was not only to reduce flies, but also to address root causes by reducing odors, improving cleanliness and hygiene, minimizing reliance on chemical pest control, and encouraging visitors to become active partners in environmental stewardship. The concept was based on a simple principle: if food waste is separated at the source, returned through a clear collection system, and transformed into valuable resources, a campsite challenge can become a circular tourism opportunity. This became the Mae Wang Food Waste Loop: register → borrow a food-waste separation bin → separate solid and liquid waste at the tent → return the bin through a deposit-refund system → collect waste daily → process waste through composting and resource recovery → maintain a

cleaner campsite. Guided by a Zero Waste approach, organic scraps are composted into bio-fertilizer, while suitable leftovers are reused as animal feed. By closing the resource loop, the park reduces environmental impacts and waste transport, improves visitor experiences, and enables visitors to become part of a more regenerative and circular tourism model.

The Journey: How change happened

8-Step Mae Wang Food Waste Loop Model were established from learning experiences as follows:

Step 1: Engage visitors from the start

Every camper registers at the park service point and receives guidance on responsible food waste management before entering the campsite. Staff guiding a process that prevented the problem at its source. The park had not simply added a new bin. It had redesigned the relationship between campers, food waste, staff, and the campsite environment.

Step 2: Provide practical tools for action

Visitors who plan to cook borrow a covered food-waste separation bin through a 200-baht deposit-refund system, encouraging accountability and participation. Each tent or family received one covered bin. Inside the bin was a strainer layer designed to separate solid food scraps from soup and other food liquids. This simple design addressed one of the root causes of the problem.

Step 3: Separate food waste at the source

Campers separate solid food scraps from soup and liquid waste directly at their tents, preventing leakage, odors, and fly attraction.

Step 4: Make responsible behavior easy

Visitors can cook near their tents while managing food waste conveniently, eliminating the need to carry waste long distances and increasing participation.

Step 5: Collect and monitor daily

Park staff collect the bins every day, ensuring proper waste handling, maintaining cleanliness, and preventing waste accumulation within the campsite.

Step 6: Transform waste into valuable resources

Following a Zero Waste approach, solid food scraps are processed into organic compost through underground composting tanks, while suitable leftovers are reused as animal feed.

Step 7: Close the circular tourism loop

Instead of being transported for external disposal, food waste is recovered and reused within the destination, reducing waste volumes, lowering environmental impacts, and supporting circular resource management.

Step 8: Create shared value for visitors and nature

The system reduces flies and odors, improves visitor comfort, minimizes reliance on chemical pest control, and turns campers into active partners in conservation. The model can be adapted by national parks, campsites, community-based tourism destinations, and other nature-based tourism sites.

Through the Mae Wang Food Waste Loop, food waste is no longer treated as a disposal problem but as a valuable resource. By combining visitor participation, Zero Waste principles, and resource recovery, Mae Wang National Park has transformed a campsite challenge into a practical circular tourism model that enhances visitor experiences, supports conservation, and offers a replicable solution for protected areas worldwide.

The Breakthrough: What you achieved

During the campsite operating period from December 2025 to February 2026, Mae Wang National Park managed 189.4 kilograms of solid food scraps through the food-waste separation system. This figure refers specifically to solid food scraps separated from food liquids.

The results were visible in the campsite. Flies decreased significantly, and in some periods, they were almost no longer found in the camping area. Unpleasant odors from food waste were reduced. The campsite became cleaner, more comfortable, and more suitable for visitors who came to enjoy nature.

The system also reduced the need for chemical pest control. Instead of treating flies as the main target, the park removed the conditions that allowed flies to thrive. Food scraps and liquids that once created odor and attracted insects were separated, collected, and processed through composting.

The benefits were both environmental and operational. Visitors had a more pleasant experience. Staff had a clearer and more manageable system. Food waste became an input for composting rather than a source of nuisance. The campsite's certification under Thailand's Camping Standard, Category C1, further supported its role as a site working to improve environmental management, hygiene, and visitor services.

The real breakthrough was not only that flies decreased.

The deeper achievement was that Mae Wang National Park transformed a small, visible problem into a practical management model that could be repeated, explained, and shared.

Reflections: What you learned and what others can learn

Mae Wang National Park learned that small environmental problems often reveal larger system challenges. What initially appeared to be a fly problem was ultimately a food waste management issue.

The park discovered that effective sustainability is not achieved through stricter control alone, but through designing systems that make responsible behavior easy, practical, and rewarding for visitors.

The success of the Mae Wang Food Waste Loop was built on five interconnected elements: Understand the root cause → Provide the right tool → Create accountability → Recover resources → Engage visitors

Together, these elements transformed food waste from a campsite nuisance into a practical circular tourism model.

Key lesson for other destinations:

Do not simply ask visitors to be responsible. Design systems that make responsible behavior the easiest choice.
By combining visitor participation, Zero Waste principles, and resource recovery, Mae Wang demonstrates how protected areas can improve visitor experiences, reduce environmental impacts, and create a replicable circular tourism model for nature-based destinations.
Small environmental challenges can become powerful innovations when destinations redesign systems rather than manage symptoms.

The Ripple Effect: Lasting impact
What began as a campsite waste management solution has evolved into a long-term operational practice at Mae Wang National Park. The Mae Wang Food Waste Loop is now part of regular campsite management, helping maintain cleaner facilities, reduce odors, and enhance visitor experiences.
Beyond environmental benefits, the initiative has encouraged behavioral change. Campers are no longer passive users of the campsite but active participants in responsible waste management and conservation.
Guided by Zero Waste principles, food waste is transformed into valuable resources through composting and reuse, reducing the volume of waste requiring external disposal while supporting circular resource management within the park.
The model has also attracted interest from other protected areas. Following its successful implementation, it was presented to national park executives and park chiefs under Protected Area Regional Office 16, creating opportunities for wider adoption across northern Thailand.
Today, the Mae Wang Food Waste Loop demonstrates how a simple, low-cost intervention can become a practical circular tourism model that improves visitor experiences, supports conservation, and provides a replicable solution for protected areas facing similar challenges.

Awards or Certifications
- National Park Award, Category G – Green Plus, with waste management and environmentally friendly operations highlighted as key success factors.
- Thailand Tourism Standard Certification for Camping Activities (Camping C1) for its campsite, recognizing safety, quality, and service standards for camping areas.

Web Articles
https://www.khaosod.co.th/lifestyle/travel/news_7358499
https://www.facebook.com/maewang.nationalpark/posts

Other Relevant Links

Quotes or Testimonials
Additional Information: Impact of the Mae Wang Food Waste Loop

The Mae Wang Food Waste Loop has generated measurable environmental, operational, and social benefits while promoting sustainable tourism practices. Since its implementation, 189.4 kg of food waste has been successfully separated and composted, reducing waste requiring disposal and supporting the park's waste reduction goals.

Visitor participation has been a key success factor, with approximately 1,236 campers per year taking part in the food waste separation system. This demonstrates the effectiveness of engaging visitors as active partners in environmental stewardship and responsible tourism.

The initiative has significantly improved campsite conditions through a substantial reduction in flies and unpleasant odors, resulting in cleaner facilities, better hygiene, and an enhanced visitor experience.

Following a Zero Waste and Circular Economy approach, all collected food waste is processed through on-site composting and resource recovery. The 189.4 kg of food waste collected has been converted into compost, transforming waste into a valuable resource rather than sending it for disposal.

The project has also strengthened environmental management by reducing reliance on chemical pest control, providing a more sustainable and environmentally friendly method for addressing fly-related issues.

Due to its proven success, the Mae Wang Food Waste Loop has been shared with protected areas across Chiang Mai and Lamphun provinces, creating opportunities for replication and wider adoption. The initiative demonstrates how a simple, low-cost intervention can become an effective and scalable circular tourism model that improves visitor experiences, supports conservation objectives, and promotes sustainable resource management in protected areas.