

Buddhist Advice to Cope with Climate Change

Case study: Wat Pa Srisaengtham, Khong Chiam District, Ubon Ratchathani Province

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Abstract

The environmental crisis warns us that human behavior and demands are causing the deterioration of the world. The causes include rapid population growth and increased resource demands for basic needs. Economic development requires more resource utilization, leading to unavoidable consequences. Industrial revolutions involving water and oil energy have long-term environmental impacts. Despite current efforts, human progress has drawbacks, including the production of hazardous chemicals in agriculture and industry. These substances harm the environment and living organisms.

Climate change, known as global warming, and natural disasters persistently affect our world. Recent events like destructive storms, PM 2.5 dust problems, and global air pollution endanger people's health. Thailand has been dealing with such issues for years, including recurring floods and disasters damaging homes and communities.

Wat Pa Saeng Thammaram Temple adopts Buddhist advice to tackle these problems. It advocates for awareness, care for the world, disaster preparedness, and resilience-building to address global crises that impact everyone's lives.

Keyword: Buddhist advice, climate change, global warming, problems

Introduction

The world in the 21st century has undergone significant changes compared to the past, and it has directly impacted humanity in every corner of the globe. One relevant phenomenon is climate change, which has led to various crises. These include more severe natural disasters such as droughts, floods, landslides, and forest fires. The occurrence of global warming has resulted in higher temperatures, causing genetic losses in plants and various forms of life. The melting of polar ice caps and rising sea levels have been observed in many regions worldwide. Additionally, new and unknown diseases have emerged, such as the COVID-19 pandemic, whose causes remain unclear. These events pose threats and dangers to humanity. If they escalate beyond a point of no return (yield point), we may be unable to maintain the balance of the climate, which affects temperature, humidity, and the amount of gas enveloping the Earth, including the gas necessary for human respiration and sustenance. It's not just humans who suffer; diverse forms of life also experience the impacts, leading to a loss of biological diversity. These mentioned occurrences are disasters and consequences resulting from climate change, excluding the dangers of war and political conflicts that are currently in opposition to human desires for a peaceful world. Peace on Earth, which is something desired for the coexistence of humanity.

If we look back into the past and consider the things close to us as representatives of how we view the world, it is believed that "the world's problems are our problems." Therefore, the best approach is to look closely and search for the causes. Thailand has also faced problems and has been affected by climate change. Looking back into the past, Thailand used to have abundant resources, including forests, water sources, and fertile soil. It had a diverse cultural heritage and traditions that varied according to the seasons and regions. It was a land of agriculture and abundant plant varieties.

However, since the Industrial Revolution, the Western world's prosperity has expanded, leading to the development of countries in a globalized world. With an increasing population, there is a higher demand for resources. The development of countries focused on economic growth has resulted in economic expansion, the expansion of workspaces, and a single indicator of Gross Domestic Product (GDP). This has led to the acceleration of production and consumption under the capitalist system without fully realizing the consequences or adapting appropriately to the limited resources we have. Agricultural practices have changed, emphasizing mass production, extensive land use, and the use of large quantities of chemicals. These practices have daily impacts on water sources, soil quality, and air pollution, causing the accumulation of toxins in human bodies without full awareness of the consequences.

The shift towards monoculture agriculture and the development of difficult-to-control industrial zones have led to a significant loss of fertile land in many areas of the country today. This loss includes not only the depletion of natural resources but also a setback in terms of scientific and technological advancements. This has resulted in an environmental crisis, leading to the loss of natural resources that were once abundant in the past. Forest areas and water sources have been lost due to human-induced destruction, without fully understanding the consequences. As a result, some areas are no longer able to sustain traditional livelihoods through farming practices.

The migration and influx of labor into urban areas, as well as the displacement of communities, have led to various other consequences. When the previously fertile environment and ecosystem are lost, it inevitably results in additional problems. The economic and social impacts are significant, such as economic repercussions and social issues within the affected communities. Families may experience a lack of warmth and support, and the younger generation may face educational challenges. Additionally, issues like drug addiction can arise as well.

This is just to show that the cause of the crisis we are currently facing is due to humans using resources excessively. This is beyond the natural balance without an adequate replacement or restoration. At the global or world level, the United Nations (UN) has identified that our world is facing three important crises at the moment: water crisis, food crisis, and energy crisis. These three aspects are interconnected and have mutual impacts. The means to survive or solve these problems have been stated as "People, Landscape, and Ecosystem," which means giving importance to "people" and the "ecosystem" in which humans live, inviting

countries around the world to collaborate in working towards the 17 Sustainable Development Goals (SDGs) set by the UN in 2015.

As for Thailand, we have a great king who understands and sees the hardships of the people as something that needs to be addressed. His Majesty the King Rama IX, or King Bhumibol Adulyadej the Great, initiated royal projects and conducted research to provide solutions. There are over 4,000 royal projects that have been established, and His Majesty has bestowed significant knowledge that is globally recognized as a way to address the problem of imbalanced consumption, which affects humans and the environment. These include: 1) Sufficiency Economy Philosophy (SEP), and 2) New Theory, which consists of over 40 theories divided into four areas: land, water, forest, and people.

One of the well-known applications of the "New Theory" in allocating agricultural land proportionally (30% for tree planting, 30% for paddy fields, 30% for water sources, and 10% for housing and animal husbandry) is just one of the more than 40 theories. However, the most important principle in solving these problems is human development. In the "New Theory," which focuses on "people," His Majesty has been awarded the highest global award from the UN, known as the "Human Development Award."

In terms of Buddhist principles, the approach to problem-solving is through the "Dhamma," which is a middle path that harmonizes with nature without exploitation. When the world changes, and various advancements and technologies emerge, problem-solving still relies on the "Dhamma" as a timeless principle that can be adapted to the context of society. It incorporates the "Seven Principles of Goodness" (understanding cause and effect, self-awareness, moderation, timelessness, community awareness, and individual awareness) in considering various actions. The Most Venerable Phutthasat Woramoli, the abbot of Wat Pasaengtham, has exemplified and applied these middle-path principles in conjunction with appropriate development approaches for community contexts. It involves the application of the "Bua" principle (home-temple-school/government) that begins with human development, fostering knowledge, and then developing work, spaces, and coordinating problem-solving from grassroots to achieve sustainable development under the UN SDGs, with confidence in the principles of sufficiency economy, the middle path, and the principle of moderation passed down and preserved by King Rama IX and continued by King Rama X as a way out.

In addressing various crises that we are currently facing, the projects or activities that have been implemented have utilized ethical principles in practice, which began with the temple area. Over time, they have been developed and expanded to support the resolution of problems related to the public's hot issues in a difficult and remote area. By applying various ethical principles and collaborating with various organizations and sectors to bring knowledge and development of people to practice, in order to eliminate problems in various dimensions that respond to Sustainable Development Goals (SDGs). The use of renewable energy from solar power, which is a clean energy source, and the management of the environment, are part of the BCG Model approach and participation in the Sufficiency Economy

Development Zones (SEDZ) project of the Ministry of Thailand, which aims to eliminate problems related to people and resources in various aspects.

In terms of implementation, it consists of principles and ethical guidelines as follows:

1. Wat Pa Srisaengtham, affiliated with the Dhammayutika Nikaya, is located at 212 Moo 5, Ban Dong Dip, Huai Yang Subdistrict, Khong Chiam District, Ubon Ratchathani Province. The abbot is Phra Panyawichai Montree. The surrounding community near the temple is a remote rural area far from development. It is situated near the Thai-Lao border. The community primarily relies on agriculture, but it is not very productive due to the poor quality of the soil, which lacks fertility and is rocky, as well as unsuitable for cultivation due to sandy soil. As a result, young men and women leave their homes to work as laborers in factories in the cities. Only elderly people and children remain in the village, lacking proper care and warmth from their families. This situation easily leads to social problems such as drug addiction, early pregnancies, and inadequate education. When the temple, which is one of the social institutions, witnessed the hardships and the heated atmosphere in the community, it decided to provide assistance by developing the community through an integrated approach. The temple aims to become the center of community development and has the compassionate intention to improve the quality of life for others, to help them escape from suffering or undesirable circumstances.
2. Wat Pa Srisaengtham has adopted **The Seven Principles of Supap Punnathamma** and implemented the teachings as a guiding principle for community development, rooted in Buddhist principles, aiming to bring completeness and fulfillment to all aspects. The fundamental principle is the Dharma of a Good Person, which leaders uphold to cultivate individuals into virtuous and morally upright beings. The virtue of a good person lies in understanding causes, effects, oneself, approximations, time, community, and individuals. This serves as the foundation and the philosophy of self-sufficiency that His Majesty King Bhumibol Adulyadej graciously bestowed upon the Thai people for sustainable development at all levels and dimensions, including the economy, society, environment, technology, and state policies.

The development begins with nurturing individuals to become the focal point of progress. It is of great fortune that His Majesty King Bhumibol Adulyadej, the ninth monarch of Thailand, personally initiated and supported over 4,600 exemplary projects. These projects have encouraged and promoted the people at all levels, from individuals and families to communities, organizations, and national levels, to apply the principles of Dharma in their development endeavors, striving for sustainable development that has gained recognition worldwide.

Notably, Mr. Kofi Annan, the Secretary-General of the United Nations (UN), bestowed the "UNDP Human Development Lifetime Achievement Award" to His

Majesty King Bhumibol Adulyadej on May 26, 2549 (2006) in recognition of his utmost success in human development within the framework of the United Nations Development Program. Furthermore, it is fortunate that the current reigning monarch, His Majesty King Maha Vajiralongkorn, has continued to uphold and carry forward Thailand's development path from the reign of King Bhumibol Adulyadej, in accordance with the royal aspiration of "upholding, preserving, and advancing" the nation.

Note: The dates mentioned in the translation are in the Buddhist calendar (BE), which is 543 years ahead of the Gregorian calendar (AD).

3. Phra Panthawichairomali has been effectively applied as a guiding philosophy for community development, starting with the establishment of a school and charitable activities to instill morality and knowledge in children. In 2010 (2553 in the Buddhist calendar), funds were raised to construct a secondary school named "Srisaengtham School" that admitted students from grades 7 to 12. The objective was to enhance the quality of education for children in the community, providing them with better educational opportunities. The school aimed to cultivate individuals of good character, contribute to society, and serve as role models for other children and parents, emphasizing the importance of education. It was hoped that the students graduating from this school would have prosperous and ethical careers, surpassing their predecessors, in accordance with the Buddhist principle that states, "The wise will acquire wealth." The principles of virtue, ethics, mindfulness, and wisdom were incorporated as the foundation for holistic development of the students' body, speech, and mind, fostering their moral character within the school environment. The ultimate goal was to nurture individuals who possess virtue and moral values.

4. The issue of environmental conservation is considered important and relevant to the context of the community. The subjects of "Energy and Agriculture" are included in the school curriculum to bridge the gap between learning and practical application. The curriculum covers topics such as human health, reforestation, and the benefits of land, water, wind, and solar energy. These subjects serve as the foundation for sustainable livelihood and address economic issues within households and the community. This marks the beginning of applying the principles of self-sufficiency economics to school development. Initially, there was a lack of teaching equipment and other expenses, and most of the students came from relatively low-income families. Therefore, the temple managed to provide free education, transportation services, and daily meals for approximately 200 students for over 13 years. Despite the initial scarcity in all aspects when the school was first established, including the absence of classrooms, Phra Panthawichairomali, as the founder, sold his mother's house to construct the school building and continued to develop it until it gained recognition globally. As a result of implementing the principles of self-sufficiency economics within Srisaengtham School, or the integration of Buddhist ethics into comprehensive development, the former Vice President of the United States, Albert Arnold Al Gore, sent a documentary team to broadcast a program on climate change worldwide. This success was achieved by incorporating the principles of self-sufficiency economics in managing the school, utilizing the temple and the school as areas for research and innovation, building upon the students' knowledge from local

wisdom, involving relevant organizations and various network universities. This comprehensive approach is known as the "Kok Edo Valley" project, where Phra Panthawichairomali transformed the temple and school into spaces for research and innovation, extending the impact of the students' learning experience. The project aimed to manage the environment and address community issues in the areas of livelihood and lifestyle, focusing on energy and agriculture.

5. The development that started from small initiatives involved utilizing discarded broken solar panels as educational tools for children. Through experiments on the effects of light on solar panels and the laws of Ohm, these broken solar panels were repurposed and installed in the school. As a result, the school received the national-level Low Carbon School award and achieved a Net Zero electricity cost, using 100% solar energy to generate approximately 600 kW per day or 220,000 kW per year. This initiative also contributed to a reduction of approximately 110,000 kilograms of carbon dioxide emissions annually. Typically, solar panels can be used for 30 years. When considering the carbon dioxide emissions reduced with the help of the temple, the total reduction amounts to 3,300,000 kilograms or 3,300 metric tons.

6. The shortage of energy became evident from climate volatility, economic turmoil, and global political conflicts. Phra Panyawatthikomol has applied his teaching experiences within the school to teach energy education to the general public. Over 3,000 people from across the country have learned about solar energy systems through simulations at Wat Pa Srisangwattana School. Graduates from this school have pursued higher education in electrical engineering, specializing in solar energy, and returned to teach the younger generations in the school, creating a sustainable cycle. This can be seen as an example of "Sustainovation in Action," the development of environmental management through self-initiated innovations and numerous self-sustaining and collaborative agricultural and clean energy projects. These efforts have not only benefited the local community but also extended assistance to society at large. Two notable areas of focus are energy and agriculture. Here are some exemplary projects:

1. Projects in Renewable Energy

1) The Net Zero School project is a result of classroom activities and installations throughout the school. It involves an integrated approach to education in four disciplines: Science, Technology, Engineering, and Mathematics (STEM Education). This specialized curriculum is implemented at Srisangwattana School.



2) The project aims to assist society during times of disaster, such as floods or areas without electricity, through the provision of emergency kits. It includes teaching courses on Stand-Alone Electrical Systems, which are promoted through social media platforms such as Facebook, YouTube, Line, web blogs, e-books, as well as printed books titled "Sunlit Schools" and "Solar Energy Techniques for Local Communities." These initiatives are designed to make knowledge accessible to the general public, following the compassionate principles of Phra Panwad Chamnonglatham, while also offering training courses for the public to learn at Srisangwattana School.

3) The "Chang Khao Team" (Hungry Craftsmen Team) was born out of the Learning by Doing teaching approach, which instructs and guides students to install solar panels in the school's agricultural area. Eventually, local residents began hiring them to install solar panels in various locations during weekends, holidays, term breaks, or when there was no funding available for children's lunch in the school. In response, Phra Panwad Chamnonglatham organized student teams to take on these installation projects. By installing solar panels, they earned money to provide free lunch for the students each day. Hence, they were named the "Chang Khao Team," meaning the team of craftsmen working for food. Their work of installing solar panels aims to earn income to support the Free Lunch Program for students, ensuring that they have meals every day.



4) The "77 Provinces, 77 Hospitals" project involves the installation of 112 kW solar panels in hospitals across the country. With a budget of approximately 3.5 million baht, it helps save approximately 70,000 baht per month or 840,000 baht per year in electricity costs. Over the 30-year lifespan of the system, it can save hospitals up to 24.6 million baht in electricity costs (based on current rates). Furthermore, it contributes to reducing carbon dioxide emissions by approximately 2,759,400 kilograms, equivalent to planting 275,940 trees per hospital. Currently, the project has been implemented in 13 hospitals, and the budget is provided through

donations to the "77 Provinces, 77 Hospitals Solar Fund" established by Phra Panwad Chamnonglatham specifically for hospitals.









2. Agricultural Projects

Phra Panwad Chamnonglatham has engaged students in organic farming activities within the school since the establishment of the new school. It has developed into the "Phraratchatharn Khok, Nong, Naa: Nampai Nai and Kwam Wan" project (at Wat Pa Srisaengtham) and the "Economically Self-Sufficient Zone Development" project. These initiatives apply the principles of self-sufficiency economics to community development, where agriculture is the main occupation, but the land is not suitable for cultivation. Additionally, the local residents practice farming without proper knowledge. Therefore, the temple provides training to enhance their occupational skills and lifelong learning opportunities to overcome poverty.

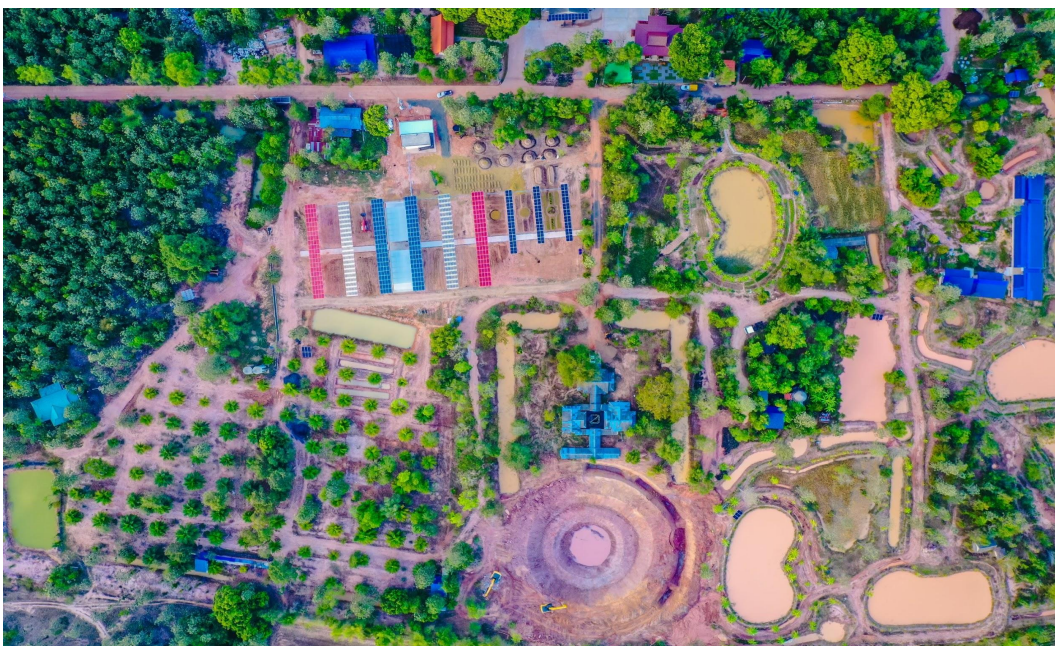
The training covers various areas, such as building houses with soil and natural materials, utilizing solar energy, learning about forests, composting techniques for soil improvement, and understanding underground water resources. It serves as a lifelong learning center to combat poverty. Furthermore, it serves as a research area and innovation hub for agricultural practices, "smart intensive farming methods", and sustainable agriculture. Examples include single seedling rice cultivation using the System of Rice Intensification (SRI) and permaculture-based forest vegetable gardens to address persistent poverty issues.



- 1) The Solar Sharing project, also known as growing crops under solar panels, is an experimental initiative in high-value organic agriculture. Crops such as sweet organic tomatoes and cantaloupes are grown both inside and outside greenhouses. The concept of Solar Sharing maximizes the utilization of space by cultivating vegetables under solar panels, which allows for the sharing of sunlight for electricity generation and photosynthesis of plants.

The project's second aspect involves sharing electricity between the temple and the community through a Battery Energy Storage System (BESS) with a capacity of 500 kWh. This system distributes electrical energy throughout the temple area and provides electricity to Srisaengtham School for joint usage. Furthermore, in the future, the electricity generated from this sharing project will be utilized for processing organic agricultural produce from the surrounding community.

Note: "Solar Sharing" refers to the practice of utilizing the space beneath solar panels for agricultural purposes while generating electricity.





- 2) The Buddhist Agriculture project is a Buddhist sanctuary that houses the sacred relics of Phra Boromathat Srisaengtham Mahavichiramolim. It serves as a central hub surrounded by a 240-acre area dedicated to integrated agriculture and solar energy. The project aims to create an Eco Valley community and achieve Sustainable Development Goals (SDGs) 17, focusing on water, energy, and food security. Additionally, the project extends its principles to other communities, with Wat Pa Srisaengtham contributing to the sustainable development of over 7,500 villages nationwide.

The Buddhist Agriculture project focuses on reforestation to create a cooler environment and help purify the air. Trees play a crucial role in absorbing carbon dioxide, a major cause of the current climate change crisis. The trees planted in the project area are long-lived, with some reaching over 50 years of age. Medium-sized trees with a lifespan of 20 years or more are also cultivated, along with fast-growing plants, fruits, and vegetables, including rice cultivation. Furthermore, a large-scale underground water reservoir is built to collect rainwater from the area and other sources, ensuring an adequate water supply for irrigation. Solar-powered water pumping systems are utilized to distribute water throughout the region. The project incorporates local wisdom and appropriate innovations based on modern land management theories, considering social and community-based design principles for sustainable development.





Conclusion

The principles of morality in Buddhism serve as a middle way or a path of balance in living harmoniously with nature. These principles provide guidance for solving problems at various levels, from individual to global, and addressing dimensions of development including social, economic, environmental, technological, and knowledge-based changes in the world.

The middle way represents the moral principles in Buddhism that teach humans to coexist with the world in a balanced manner, aligning with the important principles of moderation, which consist of reasonableness, sufficiency, and good immunity with significant conditions governed by two additional principles: knowledge and ethics. These principles lead to the outcomes or effectiveness of various problem-solving approaches that we are currently facing. The middle way of morality is realized through practical application (practice of worship) with knowledge and ethics, allowing for the application of "Akaliko" or timeless aspects through the "Seven Principles of Ethical Conduct" (knowing the cause, knowing the effect, knowing oneself, knowing proportion, knowing the time, knowing the community, knowing individuals) that are consistent with the principle of sustainable economics. These principles provide us with a way out for solving problems in at least five dimensions, including 1) social, 2) economic, 3) environmental, 4) technological, and 5) global knowledge.

The principles and ethics are essential for addressing the challenges posed by climate change and the changing weather patterns. A case study is Wat Pa Saeng Thammaram Temple in Khong Chiam District, Ubon Ratchathani Province.

