

# การวิเคราะห์นโยบายน้ำดื่มประจํารัฐผ่านกรอบแนวคิดทฤษฎีนโยบายใส่ใจสุขภาพ: กรณีศึกษาจังหวัดลำพูน

## Analysis of Pracharath Drinking Water Policy with Health-in-All Policies Framework: A Case Study of Lamphun Province

นิพนธ์ต้นฉบับ

Original Article

สุนิสา สัจจวิไล<sup>1\*</sup>, สิริตรี สุทธิจิตต์<sup>2</sup> และ พักตร์วิภา สุวรรณพรหม<sup>2</sup>

<sup>1</sup> ฝ่ายเภสัชกรรม โรงพยาบาลแม่ทา อ.แม่ทา จ.ลำพูน 51140

<sup>2</sup> ภาควิชาบริหารเภสัชกรรม คณะเภสัชศาสตร์ มหาวิทยาลัยเชียงใหม่ อ.เมือง จ.เชียงใหม่ 50200

\* Corresponding author: pooh\_jeabe@hotmail.com

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Sunisa Sadjaviso<sup>1\*</sup>, Siritree Suttajit<sup>2</sup> and Puckwipa Suwannaprom<sup>2</sup>

<sup>1</sup> Pharmacy Department, Maetha Hospital, Maetha, Lamphun, 51140, Thailand

<sup>2</sup> Department of Pharmaceutical Care, Faculty of Pharmacy, Chiang Mai University, Chiang Mai, 50200, Thailand

\* Corresponding author: pooh\_jeabe@hotmail.com

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### บทคัดย่อ

**วัตถุประสงค์:** เพื่อวิเคราะห์นโยบายน้ำดื่มประจํารัฐผ่านกรอบแนวคิดทฤษฎีนโยบายใส่ใจสุขภาพ (Health-in-All Polices; HiAP) เพื่อเป็นข้อมูลป้อนกลับแก่ผู้กำหนดนโยบายในการพัฒนานโยบายที่คำนึงถึงสุขภาพ **วิธีการศึกษา:** งานวิจัยเชิงคุณภาพโดยการวิจัยเอกสารและการสัมภาษณ์เชิงลึก เลือกกลุ่มตัวอย่างแบบเฉพาะเจาะจงจากผู้มีส่วนได้เสียนโยบายประจํารัฐจังหวัดลำพูน จำนวน 39 คน ระหว่างมีนาคม 2562 ถึงกุมภาพันธ์ 2563 และวิเคราะห์ข้อมูลเชิงเนื้อหา **ผลการศึกษา:** ความเป็น HiAP ของนโยบายน้ำดื่มประจํารัฐมี 3 องค์ประกอบ คือ 1) การคำนึงถึงมิติด้านสุขภาพที่ยังไม่ครอบคลุมในทุกภาคส่วน ปัญหาสุขภาพไม่ถูกกล่าวถึงในการอนุมัติงบประมาณ ถึงแม้ที่มาของโครงการมาจากปัญหาความสะอาดของน้ำดื่ม และผู้ใช้งบประมาณทราบว่าน้ำดื่มประจํารัฐเกี่ยวข้องกับสุขภาพ 2) โอกาสการเปลี่ยนแปลงเชิงนโยบายให้เป็น HiAP ยังไม่ชัดเจน โดยรัฐเห็นถึงโอกาสแก้ไขปัญหาในชุมชนพร้อมกับการกระตุ้นเศรษฐกิจฐานราก แต่ยังไม่พบการเชื่อมโยงปัจจัยสุขภาพเข้ากับเป้าหมายทางเศรษฐกิจ จึงไม่เกิดโอกาสการเปลี่ยนแปลงให้เป็น HiAP และ 3) ผู้มีส่วนได้เสียที่ยังไม่ครอบคลุมและขาดการมีส่วนร่วม โดยหน่วยงานด้านสุขภาพไม่ถูกกำหนดในคณะกรรมการประสานและขับเคลื่อนนโยบายประจํารัฐจังหวัด และการไม่มีสายสัมพันธ์เป็นทุนเดิมระหว่างหน่วยงานด้านสุขภาพและหน่วยงานผู้ใช้งบประมาณ ทำให้ดำเนินงานแบบแยกส่วน การมีส่วนร่วมของหน่วยงานด้านสุขภาพอยู่ในระดับน้อยคือรับรู้ข้อมูลข่าวสารเท่านั้น **สรุป:** นโยบายน้ำดื่มประจํารัฐมีความเป็น HiAP ที่ไม่ชัดเจน ทั้งในการคำนึงถึงมิติด้านสุขภาพ โอกาสการเปลี่ยนแปลงเชิงนโยบายของ HiAP และความครอบคลุมของผู้มีส่วนได้เสีย รัฐอาจเริ่มสนับสนุน HiAP ด้วยการสั่งการและสนับสนุนการสร้างพันธมิตรและศักยภาพของผู้มีส่วนเกี่ยวข้องและส่งเสริมการทำงานบูรณาการอย่างมีส่วนร่วมของหน่วยงานที่เกี่ยวข้อง

**คำสำคัญ:** นโยบายประจํารัฐ, น้ำดื่มประจํารัฐ, ทฤษฎีนโยบายใส่ใจสุขภาพ, นโยบายสาธารณะ, สุขภาพ

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### Abstract

**Objective:** To analyze the Pracharath drinking water policy with Health-in-All Policies (HiAP) framework to feedback to policymakers in developing policies that are more health conscious. **Method:** This qualitative research used document reviews and in-depth interviews. The interview on a purposive sample of 39 civil state policy stakeholders in Lamphun province was conducted from March 2019 to February 2020, and contents were analyzed.

**Results:** Based on HiAP concept, the Pracharath drinking water policy comprised 3 elements. First, health dimensions were not included all sectors. Health issues were not incorporated in budget approval criteria although the project was originated from the unclean drinking water and budget providers knew the health aspect of the drinking water. Second, opportunities for policy change to HiAP remained unclear. The state sees an opportunity to solve the drinking water problem while simultaneously stimulating local economy. Despite an opportunity, health factors were not linked to the policy's economic goals, hence no chance to convert to HiAP. Third, some stakeholders were not included and lacked participation. Health agencies were not included in the provincial driving committees. There was a lack of existing ties between health offices and budgeting agencies; hence no cooperation but only some information received. **Conclusion:** Pracharath drinking water policy was not HiAP oriented either health consideration, opportunities for HiAP's policy change, or stakeholder involvement. States may begin to support HiAP by directing and raising awareness, enhancing stakeholders' potential, and promoting participation and cooperation of relevant agencies.

**Keywords:** Pracharath policy, Pracharath drinking water, Health-in-All policies, public policy, health

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## Introduction

Water is a necessity for human survival. As a result, water purity and safety are important aspects of public health. According to the World Health Organization, clean water is a basic health right that everyone deserves.<sup>1</sup> Water quality issues constitute public health subjects that no single person

can solve, but they need a collective impact of change using the state's administrative procedure known as "policy".

The "Pracharath Policy" or the "Civil State Policy" was established by the Thai government in 2016 as a basic economic development policy. The "Pracharath Drinking Water Project," aiming to provide people with clean, safe and

affordable drinking water while also increasing community income, was one of the civil state policy operations to promote the economy through the production and distribution of drinking water.<sup>2</sup> In Thailand, the production and distribution of drinking water must be authorized and regulated under the Food Act of 1979, and an FDA number must be issued, serving as a symbol of quality assurance that the water is clean and safe. Before they can legally manufacture and sell the drinking water, they must meet the standards of good manufacturing sites (Good Manufacturing Practice: GMP) as well as laboratory quality criteria for physical properties chemical makeup and pathogens.<sup>3</sup>

The Northern Region Industrial Estate, located in Lamphun Province, comprises a large number of industrial plants both outdoors and within industrial parks. In 2017, 59 Pracharath drinking water projects were operational,<sup>4</sup> but only one (1.7%) was approved under the Food Act 1979. Only approved operators will be inspected and monitored by the Provincial Public Health Office at least once yearly to ensure compliance with the standards. The remaining 98.3% of civil state drinking water projects that did not meet production standards were not permitted to manufacture and were thus unmonitored. Anyone drinking this unsafe water is putting their health at risk.

According to the Food Quality and Safety Bureau's report in 2016, 58.0% of bottled water, a popular type of water, failed to meet quality criteria.<sup>5</sup> Diarrhea, food poisoning and dysentery are some of the diseases caused by contaminated water and can be fatal.<sup>6</sup> In 2014, a survey of one million people found that eight died from these diseases in two months.<sup>7</sup> As a result, bottled water production and distribution at the Pracharath drinking water project are critical. The problem of contaminated drinking water is an example of the consequences of government economic policies that may overlook health aspects.

The World Health Organization's concept of "Health in All Policies (HiAP)" connects health impacts to a policy process aimed at economic and political ramifications, ensuring policy formation that prioritizes health. The HiAP concept also aligns with the Sustainable Development Goals of the United Nations, which call for development based on the interconnection of economic, sociocultural and environmental factors.<sup>8</sup> The HiAP has three aspects, according to the Association of State and Territorial Health Officials (ASTHO)<sup>9</sup> and Moloughney<sup>10</sup>: consideration of health and equity,

stakeholder engagement and policy change opportunity. In addition to the fundamental components, other factors support the HiAP, such as the link between organizations, evidence, expertise, operations, funding and government.

A variety of studies have been conducted on Pracharath's drinking water policy in Thailand, such as comparing and contrasting policy-making directions against populist policies,<sup>11</sup> the implementation of civil-state policies,<sup>12</sup> and the impact of drinking water vending machines.<sup>2</sup> However, no studies have looked at the policy-making process from a health perspective. Furthermore, a lack of understanding remains regarding the health component and its relationship to policy implementation, which, in turn, may aid in the solution of the drinking water problem.

A health impact assessment of potassium mining in Udon Thani Province and the development of the Map Ta Phut Industrial Estate were among the studies conducted concerning state policy.<sup>13,14</sup> These studies focused on economic policy health consequences, but ignored issues like health and equality, stakeholder engagement and policy change opportunities. Gaps remain in the health dimension of nonhealth policy implementation. As a result, each policy may lack long term health solutions.

The HiAP promotes stakeholder collaboration to address long-term health issues.<sup>15,16</sup> This study aimed to analyze the Pracharath drinking water policy using the HiAP concept and recommend future policies.

## Methods

In this qualitative study, stakeholders in Lamphun Province's Pracharath drinking water policy were interviewed indepth, and documentary research was conducted on regulations, reports, publications, and statistics pertaining to the Pracharath drinking water policy. The research project was reviewed by the Human Research Ethics Committee, Faculty of Pharmacy at Chiang Mai University, No. 10/2019; approval date: March 15, 2019.

The key informants for the indepth interviews were purposefully chosen from stakeholders of the Pracharath drinking water project in Lamphun Province who had knowledge of the project and were willing to participate in research studies. The five stakeholder groups included 1) top management of all related departments, 2) operational personnel in the department, 3) Pracharath drinking water

entrepreneurs, 4) village committee group and 5) community members. The last three groups were from the same community to better understand the study area. The interviews were repeated until the information was saturated or no new information was discovered.

The research instruments included a record form for documentary research and structured indepth interview guide. The record form was used to document the results of the literature review in a variety of related documents about the Pracharath drinking water project, including regulations, reports, project documents, government work processes, as well as books, published and unpublished articles and internet searches.

The indepth interviews were conducted using a structured indepth interview guide. The HiAP framework was used to create guidelines developed by the Association of State and Territorial Health Officials (ASTHO).<sup>9</sup> The open-ended questions ranged from key informant demographics to policy change opportunities, health and equity concerns in the policy process, stakeholder engagement, obstacles and suggestions for the Pracharath drinking water policy. The interview questions were adapted to fit two levels of key informants based on this main structure. Questions about the components of HiAP and policy formation were primarily directed at policymakers at the provincial and village levels, while questions about policy implementation were directed at operational personnel, Pracharath drinking water entrepreneurs and the public.

Examples of indepth interview questions are listed below. "What role did you play in the Pracharath project and the Pracharath drinking water?", "How are the operations carried out?", "What is the intention or goal of establishing the Pracharath drinking water project?", "What are your health expectations" and "How is the current situation expected or not?" The content validity of the indepth interview guide was assessed by three people: provincial policymakers and health policy experts. During the interview, a voice recorder and a notebook were used to help write down significant word points and observed context.

For the documentary research, information of regulations and various statistics related to the Pracharath drinking water policy was obtained. For the inquiries on stakeholders of the policy in Lamphun province, the following individuals with the willingness to participate were selected by purposive sampling and interviewed. Based on the selection criteria, there were 5

groups of stakeholders: (1) individuals at the top management of each of all related public provincial departments and committees that coordinated and drove the policy in Lamphun province, (2) individuals at the operational level in the departments and committees mentioned in (1), (3) entrepreneurs of Pracharath drinking water in Lamphun province, (4) members of the village committee, and (5) general people. A total of 39 prospective interviewees offered a saturated interview data. Once no new information was found from the interview data, the data were considered saturated, and the interview was stopped. A total of 39 prospective interviewees offered a saturated interview data.

#### **Data collection procedure**

The researcher (SS) contacted and introduced herself to the key informants and obtained their informed consent using participant information sheets. The researchers scheduled interview at a time, date and location that was convenient for the key informants after they consented to participate and provided written consent. The researcher asked permission to record the interviews and conduct indepth interviews based on the interview guide. The interviews took roughly 45 to 60 minutes to complete. After the interview, the researcher double-checked the accuracy of the information, addressed any issues that were left unresolved and thanked the key informant before leaving.

#### **Data analysis**

Documentary data were analyzed to determine the accuracy and reliability of the data.<sup>17,18,19</sup> The indepth interview recordings were transcribed verbatim, and the data were grouped in categories based on three aspects of the HiAP framework: health and equality consideration, stakeholder engagement and policy change opportunities. Data triangulation was used to confirm the accuracy of the information and establish a conclusion illustrating the theme and subtheme relationships, which were then related to HiAP concepts.

## **Results**

Indepth interviews were conducted with 39 key informants involved in the Pracharath drinking water policy, including top management, operational personnel, Pracharath drinking water entrepreneurs, village committee members, and the public. Except for the senior managers, the majority were

females aged 36 to 59, with less than 10 years' experience in the drinking water industry. The top managers were mostly males with 10 to 20 years' experience in the drinking water industry. More than one half of the key informants lived in Mueng, Li, Pa Sang or Ban Hong.

In 2017, Lamphun Province had 563 Pracharath projects, mostly nonhealth initiatives including fertilizer manufacturing (118 sites) and vehicle rental (91 sites). Agricultural or food processing projects (1 site) and the Pracharath drinking water project (58 places) were among the health initiative projects, totaling only 10.48% of the projects.<sup>4</sup> The Pracharath drinking water project comprised three types: producing facilities (15 sites), vending machines (42 sites) and both (1 site). Only one Pracharath drinking water production facility was licensed under the Food Act in 1979. This totaled only 6.67% of the 15 Pracharath water production site.<sup>20</sup> (Table 1).

**Table 1** Number of licensed drinking water production sites in Lamphun province in year 2020.

District in Lamphun province	Number of licensed drinking water production sites	Number of Pracharath drinking water production sites	
		Total	Number passing the GMP and licensed (%)
Muang	55	1	1 (100.0)
Maetha	9	1	0
Pasang	16	0	0
Banthei	2	1	0
Banhong	7	0	0
Li	7	6	0
Wiangnonglong	5	3	0
Thunghuachang	2	3	0
Total	103	15	1 (6.7%)

Source: Lamphun Provincial Public Health Office (February 2020).<sup>20</sup>

The findings of the Pracharath drinking water policy study were separated in three primary aspects of the HiAP concept: 1) opportunities for policy change to become HiAP, 2) consideration of health and equity dimensions in the policy process and 3) stakeholder engagement.

### Opportunities for changes in Pracharath drinking water policy

The Office of the National Village and Urban Community Fund supported Pracharath's drinking water policy, and the budget was approved by community vote. However, the importance of health issues was excluded from the budget approval criterion. Furthermore, despite the fact that the state recognized the Pracharath drinking water project as a community's last hope for dealing with expensive private-sector drinking water and the problem of contaminated water,

nearly all drinking water production facilities failed to meet the GMP production standards.

*"Because we feel it was their decision, we accepted and honored it. We didn't check if it met FDA standards, how well they planned the manufacture or whether they consulted anyone in authority. We merely looked at our villagers' wishes and supported them." (Director of Village and Urban Community Fund, Region 1)*

*"Because the economy is weak right now, the locals want clean, cheap drinking water while cutting down on their household expenses." (People A)*

Most Pracharath drinking water plants did not fulfill GMP standards. This was mostly due to inadequate facility structure, as most used public space in the neighborhood to set up a factory, and no method was standardized for maintaining tools and machinery. They also lack qualified staff. These all affected the water quality system. Because they didn't research or consult specialists before submitting a budget or building, the Pracharath drinking water production facility didn't fulfill standards and needed to be improved. Inconsistent fiscal assistance also hindered manufacturing improvement. Because production was not permitted by law, the Provincial Health Office was unable to manage, supervise, monitor or support them.

*"People in the community will help each other think of ways to use government funds, such as Pracharath drinking water, gas stations and stores. Without studying, consulting or seeking guidance from the proper authorities, the project is a waste of money." (Health Officer D)*

*"The actual issue is that the officers can't investigate. It's a significant issue. No inspections are conducted and no permits are issued once built. It's as though lines and barriers are stopping us." (Health Officer H)*

### Consideration of dimensions of health and equality in policy making and implementation

The interviews revealed that the state and the people have similar economic aims. While some villages include health in their policy objectives, the government simply cites economic objectives. The state acknowledges the policy's health implications but fails to address them in their policy goals. As a result, Pracharath drinking water policy process did not address HiAP in terms of health and equity.

*"We primarily targeted the economy; without a direct health focus." (Village and Urban Community Fund Administrator)*

*"We did not look into the details of the activities that they proposed because, as said in the first place, we respected the*

villager's decision. So, we presumed they wanted what they decided. Only the materials they have submitted will be examined." (Director of Village and Urban Community Fund, Region 1)

### **Stakeholders engagement in Pracharath drinking water policy**

The information retrieved from the documents matched the data obtained from the interviews. The findings revealed that even though health agencies are one of the important partners in the Pracharath drinking water project, they are not included in the Provincial Coordination Committee for Pracharath policy. Furthermore, the stakeholders tended to work in silos based on their legal responsibilities, without collaborating in the functioning of Pracharath drinking water.

*"We just looked at submitted documentation to see if a meeting was held and an agreement reached concerning the villagers' needs. We didn't go to the plant. We may only visit the site after the operation begins." (Administrator of the Village and Urban Community Fund, Region 1)*

*"We never coordinated, but at the start of the Pracharath drinking water project, we wrote to someone.... I'm not sure, but it's the funding organization in the government center. The message was intended to remind them to read the law before approving a budget for the village's drinking water project or any other public health project." (Health Officer A)*

*"We advised the village fund that the drinking water needed permission from the FDA, that is, the primary conditions for the operation. We also advised them to consult the Medical Sciences Center to receive help in improving the drinking water." (Administrator of the Village and Urban Community Fund, Region 1)*

## **Discussions and Conclusion**

HiAP is a method for governing public policy. They wanted every policy decision to be systematically aware of its impact on health, and they wanted to see how different sectors could collaborate and avoid negative health consequences to improve health and health equity. The key components of HiAP can be defined by considering health and equity in policy, the coverage and engagement of stakeholders and the opportunities for policy change.

### **Considering health and equity in drinking water policy**

In Lamphun Province, the Pracharath project's principal operations were not health-related, and the drinking water project accounted only for 10.3% of the total projects.

Unsurprisingly, the Pracharath drinking water policy aimed to boost the foundation economy as well, and health concerns were excluded in the policy goal. As a result, the Pracharath drinking water policy intended to enhance the foundation economy as well, despite the state's acknowledgement that drinking water is linked to health. Other research, such as those conducted by Kesanuch et al. (2017) and Kchananan (2015), have also revealed that Pracharath policy is solely focused on economic aims.<sup>11, 12</sup>

The Pracharath policy is not the only example of public policy ignoring health concerns. Other policies include the Ministry of Public Health's evaluation of the knowledge required to enable better pesticide policy formulation in 2005. Despite the awareness that pesticides have a significant influence on both health and the environment, the state prioritized economic value over health and the environment.<sup>21</sup>

Because the state does not relate or emphasize health in its policies, the health impacts of programs with persisting economic purposes remain limited. Also, only one location of the Pracharath drinking water production facility in Lamphun Province was licensed. This is in line with the Health Center 12 sample results, indicating that 33.3% of Pracharath drinking water failed the microbiological standard.<sup>22</sup>

An examination of the Pracharath drinking water policy revealed an economic preference over health and equity. Despite the state's awareness of the policy's potential impact on health, the importance of health was unacknowledged in the policy, either in terms of advantages or consequences. Consequently, health impact assessment data should be considered in the policy-making process to create policies that benefit both the economy and society while minimizing or eliminating health impacts.

### **Coverage and participation of stakeholders**

Health agencies were not featured in the Provincial Coordination Committee for Pracharath policy despite being major partners in the Pracharath drinking water policy. The findings are supported by Vettayanont's (2018) research on the Pracharath drinking water policy in Kanchanaburi Province, where she discovered that the project working group did not include health authorities to supervise water production.<sup>2</sup> Other state policy studies have discovered similar patterns. The findings by Haesakul (2003) observed a shortage of health and environmental stakeholders affected by

the policy during the policy process in their study of health dimensions of small and medium industry development.<sup>23</sup>

Health consequences are frequently overlooked because health organizations are not involved in state drinking water policy. Furthermore, because all involved agencies work in silos, health agencies' engagement was considerably lower. No coordinated cooperative actions were in place to verify that the Pracharath drinking water production facilities met GMP standards. To assure the safety of drinking water, the Ministry of Public Health should be included in the planning, quality control and final approval stages.<sup>24</sup>

The Provincial Public Health Office had little involvement in executing the Pracharath water policy. According to the International Association for Public Participation (IAP)<sup>25</sup> stakeholder analysis matrix, the Provincial Public Health Offices have a strong interest in public health because of their direct function, but their influence on policy formulation remains limited because they have no titles in related committees of the Pracharath drinking water policy. Their lack of past contacts with other departments contributes to their low level of participation in civil state policies.

### **Opportunities for policy changes**

Opportunities for policy change arise when three streams converge: problem definition, alternative solutions and politics.<sup>26</sup> These three convergences formed the Pracharath drinking water policy. The community needs affordable clean drinking water.<sup>27, 28</sup> In 2018, the Department of Health discovered that only 19.1% of village water supplies fulfilled the criteria for drinking water quality, indicating that the majority of village water supplies are unsafe for consumption.<sup>29</sup> The state recognizes the need to improve the quality of drinking water, but also sees the opportunity to generate cash and boost the local economy. As a result, the Pracharath water policy was launched. However, the Pracharath drinking water policy lacks health targets, and hence fails to meet the HiAP objectives. Even if the public and stakeholders are aware of the health risks, opportunities for policy change to become HiAP are lost if the state fails to include health in its policymaking process.

If the entire operation of the HiAP elements is supported, HiAP of public policy can occur. One technique for increasing the prominence of health concerns on policy agenda and increasing the possibility of policy change is to persuade stakeholders or key local policymakers of their importance.<sup>30</sup>

For example, Mundo et al. (2019) created opportunities for changes in transportation policy by collecting and highlighting the importance of health in transportation health.<sup>31</sup> The findings by Lee et al. (2020) in a case study of Taiwan's Healthy Cities Program suggested that state support by setting up and funding a pilot program as well as their public relations activities might help promote the HiAP context of the Healthy Cities Program.<sup>32</sup> To build an inclusive cooperative agreement, the government and stakeholders must recognize the relevance of health in the execution of policy adjustments.

It would be critical for policymakers to understand and be able to connect the health impact, social issues and policy goals to engage all stakeholders. This is especially crucial when health agencies were excluded in the policy-making process from the beginning.<sup>33</sup> A good relationship, whether formal or informal, will facilitate HiAP. Relationships can be formed between sectors if one does not exist. For example, offering information sharing, joining a committee or aiding similar projects, will involve recognizing and proactively assisting with facing challenges, or even developing a win-win cooperation aim for both parties. Also, honoring organizations that work together to address problems is vital to a strong partnership.<sup>30</sup>

HiAP is now widely used globally. In Thailand, the HiAP concept has been mainly adopted by health agencies which may be because the National Health Commission's Third Plan (2017-2021) and the National Health Act promote HiAP in various sectors and circumstances.<sup>15</sup> However, socioeconomic policy-making is limited in adopting HiAP, producing public health issues. For example, the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP), an international economic agreement, was studied, but health was not one of the 19 subjects addressed.<sup>34</sup> An objection was raised, suggesting that the health advantages and hazards be thoroughly investigated before signing the agreement.<sup>35</sup> This criticism underscores the reality that people and stakeholders understand the connection of economic, social and health concerns, as well as the possibility of changing national policy to include more HiAP. The state recognized this possibility as well, and HiAP was eventually made a priority as a requirement for the CPTPP program.

The conclusion of this analysis of Pracharath's drinking water policy using the HiAP concept is that the HiAP component is lacking as shown in Table 2. This may have occurred because the majority of Pracharath events aren't

health-related, and the HiAP idea isn't well-known in Thailand. Therefore, it would be challenging for the Thai government to educate stakeholders on the relevance of health impacts and implement structural reforms to encourage stakeholder engagement by removing the fundamental restriction that health belongs primarily to public health agencies.

This study encountered several limitations. First, this comprised a case study in a small province which may have different policy contexts from other provinces. Second, this study only covers state agencies and the public sector; it excludes private stakeholders such as private drinking water operators, distributors and water filter installers. Third, this research investigates HiAP in terms of policy change opportunities, health and equity considerations and stakeholder engagement. However, numerous conceptual frameworks can be employed in the HiAP study to provide alternative viewpoints. Future research studies may use various conceptual frameworks and broaden the study's scope to include other sample groups and places.

**Table 2** HiAP implementation levels in Pracharath drinking water policy at Lamphun province.

HiAP in the Pracharath drinking water policy	Operation level of HIAP		
	No operation	Some operation	Complete operation
<b>Consideration of dimensions of health and equality in policy making and implementation</b> <ul style="list-style-type: none"> <li>Project goals setting</li> <li>Defining the structure and practice of the project</li> </ul>		✓	✓
<b>Stakeholder engagement</b> <ul style="list-style-type: none"> <li>Coverage of various stakeholders</li> <li>Participation level of each stakeholder</li> </ul>	✓	✓	
<b>Opportunities for policy changes</b> <ul style="list-style-type: none"> <li>Availability of information about drinking water cleanliness and problem identification.</li> <li>Availability of solutions</li> <li>Support of water cleanliness policy from policy makers</li> </ul>	✓	✓	✓

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