

# Internal and External Factors Affecting ISO 14001 Certification in the Indonesian Food Industry: Lesson from the Experts

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## Abstract

The need for food due to the increasing population is the main trigger for the growing number of food industries. The implementation of ISO 14001 is necessary for preventing environmental damage caused by industrial activities. Currently, the number of ISO 14001 certified companies in the food industry in Indonesia needs to be improved. This research aims to identify internal and external factors that influence ISO 14001 certification and provide some strategy recommendations to improve its adoption in the Indonesian food industry. Identification of internal and external factors is carried out by SWOT analysis by several experts in the field of ISO 14001 certification. The results of this research illustrate the strengths, weaknesses, opportunities, and threats that affect ISO 14001 certification in the food industry. The main strength of support ISO 14001 implementation in the food industry is management's support and commitment to implement this standard. The main weakness is the lack of the Life Cycle Assessment implementation. The main opportunity is the availability of external training institutions. The main threat is the lack of competent certification bodies. This study contributes to the body of knowledge related to ISO 14001 implementation with a particular interest in the Indonesian food industry. The results of this study provide recommendations to policymakers, corporate practitioners, and other related stakeholders to encourage greater implementation of ISO 14001.

## Keywords

Food Industry, External Factors, Internal Factors, ISO 14001 and SWOT

## 1. Introduction

In Indonesia, improving sustainable practices in the manufacturing industry sector is one of the national priority programs in 2020-2024. This priority program has a target to increase the number of ISO 14001 certified companies to 5000 companies by the end of 2024 as stipulated in Presidential Regulation No. 18 of 2020 on the National Medium Term Development Plan for 2020-2024. The number of companies applying for ISO 14001 certification is also one of the pillar indicators of environmental development of the SDG's 12.6 that encourages large and transnational companies to adopt sustainable practices and integrate sustainability information in their reporting cycles (Bappenas 2020).

The number of ISO 14001 certified companies in Indonesia is 2.125 companies (ISO 2020). It is only 6,3% of the total number of large and medium companies (BPS 2017; ISO 2020). ISO 14001 certified companies in the manufacturing industry sector are more dominant compared to the service industry sector. ISO 14001 certification data in Indonesia in 2006 – 2020 shows that the average number of certified companies per year is still low at 133 companies/year (ISO 2020). Therefore, efforts are needed to improve ISO 14001 certification in the industrial sector, mainly in the manufacturing industry.

Indonesia's population in 2020 is 269,6 million people (BPS 2020). This population number is expected to increase to 320 million people by 2045 (BPS 2018a). The need for food due to the increasing population is the main trigger for the growing number of food industries (Ramos et al. 2020). The implementation of ISO 14001 is necessary for the food industry to minimize its environmental impact. Food production activities contribute to global environmental

degradation, namely increased greenhouse gases that have the potential to cause global warming and climate change, loss of biodiversity, accumulation of waste that causes pollution, scarcity of natural resources (water, fossil fuels, and others), and natural ecosystem changes due to environmental damage (Fresán et al. 2019).

Research on the application of environmental management system in Indonesia is frequently conducted in a case study in one of the companies to measure the effectiveness of its application in improving the company's environmental performance (Wicaksana & Hatini 2014, Mauliddina & Susanty 2015, Ramadan et al. 2019, Maryeska et al. 2020). Several previous research on ISO 14001 certification in the food industry sector were done in other countries. Massoud et al. (2010), Salim et al. (2017), Salim et al. (2018), and Carrillo-Labela et al. (2020) investigated motivations, obstacles, and expected benefits of the implementation of ISO 14001, and Kumara & Weerasinghe (2017) studied the effectiveness of its implementation. Research related to the strengths, weaknesses, opportunities, and threats of ISO 14001 standards has been applied in China by Pesce et al. (2018). Nikolaou & Evangelinos (2010) have studied related strengths, weaknesses, opportunities, and threats faced by the mining and mineral industry when implementing ISO 14001. The analysis done in this research is almost the same as Nikolaou & Evangelinos (2010), but the definition of strength used is different. The meaning of strength in this research is as positive characteristics owned by companies that can support ISO 14001 certification, while Nikolaou & Evangelinos (2010) define the strength as an advantage obtained by the company in ISO 14001 certification. The evaluation of internal and external factors is expected to recommend some alternative strategies for improving ISO 14001 certification implementation in the food industry.

## 1.1 Objectives

The main objectives of this study are as follow:

- a. To investigate internal and external factors that influence the implementation of ISO 14001 certification by the food industry in Indonesia.
- b. To suggest some alternative strategies to encourage ISO 14001 certification in the food industry in Indonesia.

## 2. Literature Review

Theories related to motivation for ISO 14001 certification consist of institutional theory and resource-based theory (NRBV) (Mas-Machuca & Marimon 2019). Based on institutional theory, three pressures can encourage companies to apply ISO 14001 certification, namely coercive, mimetic, and normative pressures (DiMaggio & Powell 1983, Daddi et al. 2016). This theory explains that the company's decision to apply ISO 14001 certification can emerge from external parties. The resource-based theory explains that the company's motivation to apply for ISO 14001 certification can come from its internal factors (Salim et al. 2018).

Cushing et al. (2005) identified four main driving factors that affect the company to conduct ISO 14001 certification in China. Those factors are international trade and transnational corporate policy, environmental improvement initiatives by the government, potential environmental performance improvement and cost savings, and the encouragement of the company's top management. Some factors influencing the ISO 14001 adoption in Africa are the government involvement to promote the ISO 14001 standard, resources capability, human resource management, access to the international market, and corruption culture (Tayo Tene et al. 2018). Nikolaou & Evangelinos (2010) explored the internal and external factors of the Greek mining and mineral industry in implementing ISO 14001. Those factors are financial availability, management commitment, employee involvement, bureaucratic requirements, markets, consumers and competitive advantages, export opportunities, public awareness, legal requirements, and the consumer demand for a green product. Table 1 shows the other references related to factors affecting the ISO 14001 certification.

Table 1. Factors affecting the ISO 14001 certification.

Factors	Source
International market and export requirements	Liu et al. (2020), Salim et al. (2017)
Regulatory and legal requirements	Pinto et al. (2017), Díaz de Junguitu & Allur (2019)
Customer satisfaction	Pinto et al. (2017), Díaz de Junguitu & Allur (2019)
Government support in the form of incentives	Cushing et al. (2005), Waxin et al. (2019), Pinto et al. (2017), Salim et al. (2018), Sorooshian & Yee (2019), Mosgaard & Kristensen (2020).
Certification bodies, training institutions, and consultants	Ivanova et al. (2014), Díaz de Junguitu & Allur (2019) Hillary (2004), Babakri et al. (2003), Tayo Tene et al. (2018)
Top management commitment	Pinto et al. (2017), Mosgaard & Kristensen (2020)
Company's policy objectives	ISO (2015)
The competency, awareness, education, skills, and commitment of the employees	Waxin et al. (2017), Carrillo-Labela et al. (2020)
Internal audit	Ivanova et al. (2014), Ejdys et al. (2016)
Financial capability	Tayo Tene et al. (2018), Carrillo-Labela et al. (2020), Mosgaard & Kristensen (2020)
Technical or technological availability	Ejdys et al. (2016), Tayo Tene et al. (2018)
The experience of applying ISO 9001	Carrillo-Labela et al. (2020), Mosgaard & Kristensen (2020)
Life Cycle Assessment implementation	Ejdys et al. (2016)

The success of the environmental management system requires the full support of employees. Their lack of motivation and participation become a barrier to ISO 14001 implementation in the olive food industry in Southern Spain (Carrillo-Labela et al. 2020). Resource barriers include competence, awareness, education, skills, and commitment of employees also faced by companies in Gulf Arab countries (Waxin et al. 2017). The lack of competent personnel within the company was one of the main reasons the company did not get an ISO 14001 certificate in the construction industry in Turki (Turk 2009). Qualified personnel are also needed to conduct an internal audit. Internal auditors must have a background related to corporate activities, competent in audits, and have a good understanding of ISO 14001 standards. This internal audit evaluates the implemented environmental management systems. Internal audit is also a crucial factor influence the company's chances of obtaining certification (Ivanova et al. 2014, Ejdys et al. 2016).

Financial capability is also a determining factor for ISO 14001 certification in Danish Companies (Mosgaard & Kristensen 2020). Technical or technological possibilities of the company also become the determinant of environmental management system improvement in Africa (Tayo Tene et al. 2018). The factor that is also important is the experience of applying ISO 9001 before applying and performing ISO 14001 certification (Carrillo-Labela et al. 2020). The positive benefits of implementing and certification of ISO 9001 made the company decide to do ISO 14001 certification (Mosgaard & Kristensen 2020). The company also needs to identify environmental aspects using Life Cycle Assessment perspectives (ISO 2015). The implementation of life cycle assessment following ISO 14040 also a determinant factor to get ISO 14001 certificate (Ejdys et al. 2016).

The other crucial factors are the availability of certification bodies, training institutions, and consultants (Ivanova et al. 2014, Díaz de Junguitu & Allur 2019). Aside from aspects of high certification costs, the availability of competent certification bodies can also hinder companies from conducting certification (Hillary 2004). The role of consultants can determine the effectiveness of the environmental management system implementation even though it has no direct effect (Ivanova et al. 2014). The need for additional training to supporting the implementation of standards is a burden for the company (Babakri et al. 2003). Therefore, the role of the training institution is also salient for ISO 14001 certification.

### 3. Methods

Investigation of internal and external factors that influence the implementation of ISO 14001 certification was conducted with literature review and observation to annual reports of ISO 14001 certified companies in the Indonesian

food industry and then continued with SWOT analysis by experts from various parties related to ISO 14001 certification using questionnaires. Each rating and weight assessment of internal and external factors is carried out using a Likert scale with a range of values of 1 to 4.

Internal factors consist of strengths and weaknesses, while external factors consist of opportunities and threats. The strength is a positive characteristic of industrial companies that support the application of ISO 14001 certification. The weakness is a negative characteristic of industrial companies that inhibit the application of ISO 14001 certification. The opportunity is a positive external condition of the company that encourages the implementation of ISO 14001 certification. The threat is a negative external condition that inhibits the implementation of ISO 14001 certification. SWOT analysis stages conducted in this study are as follows:

- Stage 1 : Identification of internal and external factors of ISO 14001 certification through literature review and food companies' annual reports.
- Stage 2 : Assess the rating and weight of internal and external factors using a questionnaire with a Likert scale.
- Stage 3 : Build a SWOT matrix.

The SWOT analysis is done by experts who have background and professionals in the certification of ISO 14001. The profile of experts conducting the SWOT analysis is shown in Table 2.

Table 2. Expert profile

Position	Work experience	Organization
ISO 14001 Trainer and Lead Assessor Accreditation for ISO 14001 Certification Body	20 years	Technical Professional
ISO 14001 Trainer and APAC Peer Evaluator	35 years	National Standardization Body of Indonesia
Auditor of ISO 14001 Certification Body	5 years	Certification Body of ISO 14001 (CB-1)
Auditor of ISO 14001 Certification Body	10 years	Certification Body of ISO 14001 (CB-2)
Quality Manager Assistant	8 years	Food Industry-1 (Food and Refreshment Product)
EHFS Sect. Head	13 years	Food Industry-2 (Oil and Fat Product)

## 4. Results and Discussion

### 4.1 The Profile of ISO 14001 Certified Food Industry in Indonesia

The food industry in Indonesia consists of 7.508 large and medium-sized, 1,54 million micro-sized, and 42.239 small-sized companies. The number tends to increase from year to year (BPS 2017, BPS 2019). The food industry can employ more than one million workers. It absorbs the most labor when compared to other types of industries (BPS 2018b).

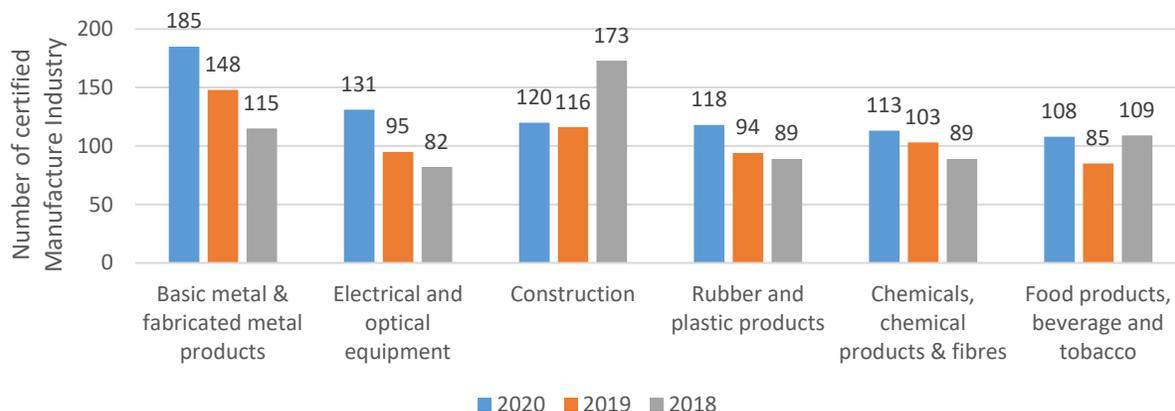


Figure 1. Indonesian certified manufacture industry by sector

Most ISO 14001 certified companies in Indonesia are companies engaged in the manufacturing industry. Figure 1 shows the six industrial sectors with the largest number of ISO 14001 certified companies in Indonesia. The number of ISO 14001 certified companies in the food industry is still low compared to the number of large and medium-sized food companies that have not been certified, at only 1,4%. The food companies that implement ISO 14001 in Indonesia are usually a company that performs export activities to various countries. Their export destination countries include countries in Asia and Europe, but the main target of export destination countries is ASEAN countries. One of the obstacles faced in export activities is non-tariff barriers. Non-tariff barriers can be in the form of standardization provisions set by the export destination country, for example, standardization for products that are safe for consumers and the environment. Some countries in Europe require environmentally friendly suppliers.

The food companies in Indonesia that have implemented ISO 14001 commonly commit to environmental protection. Their commitments set out in the environmental policy can be seen in Table 3.

Table 3. Company profile in ISO 14001 certified food industry

Company code	Product	Certification	Export status	Environmental policy
Food Industry-1	Food and refreshment	ISO 14001, ISO 45001, SMK3, Halal-MUI, ISO 26000, ISO 9001, LEED, SEAC	Exporter	Explore the environmental footprint resulting from the manufacture and use of products focusing on Greenhouse Gases, Water Use, Waste and Packaging, Sustainable Sourcing.
Food Industry-2	Oil and fat	ISO 9001, ISO 17025, ISO 22000, KOSHER, GMP+B2, RSPO, ISCC, Halal-MUI, ISO 14001	Exporter	Forest conservation and biodiversity protection, addressing the challenges of forest fire season, reducing greenhouse gas emissions, managing water footprint and energy consumption, waste management, environmental impact monitoring, research, and sustainable palm oil development.
Food Industry-3	Food, oil, and fat	ISO 45001, ISO 9001, HACCP, AIB, ISO 17025, ISO 22000, ISO 14001, ISO 50001, ISPO, SMK3, BRC, FSC, SNI, PROPER, Halal-MUI	Exporter	The company's performance rating assessment program in environmental management (PROPER), environmental management system, carbon footprint management, renewable energy, and energy conservation, land management, water management, wastewater management, harmless and hazardous waste management, post-consumption packaging waste management, sustainable plantation management.

Food Industry-4	Food	ISO 22000, ISO 9001, ISO 14001, Halal-MUI, SNI, AEO, PROPER	Exporter	Processing of production waste (solid, liquid, and gas waste), greening.
Food Industry-5	Food and UHT Drinks	HACCP, ISO 22000, ISO 14001, Halal-MUI	Exporter	All operational activities are following environmental regulations, use production facilities with the required waste treatment equipment, carry out monitoring and disposal of solid and liquid waste, use environmentally friendly packaging, conserve water and energy use, participate in planting millions of trees throughout Indonesia.

#### 4.2 Identification of Internal and External Factors Affecting ISO 14001 Certification

Analysis results of internal and external factors that affect the implementation of ISO 14001 certification in the Indonesian food industry are written in Table 4 and Table 5.

Table 4. Internal factors analysis

Strengths	Rating	Weight	Relative Weight	Score
1. Have ISO 9001 certification experience before applying ISO 14001	3,67	3,67	0,1130	0,41
2. Management's support and commitment to the implementation of ISO 14001	3,67	4	0,1231	0,45
3. Employee motivation, engagement and awareness	3,5	4	0,1231	0,43
4. The implementation of environmental management is one of the company's goals	3,67	3,83	0,1179	0,43
<b>Total</b>		<b>15,50</b>	<b>0,526</b>	<b>1,91</b>
Weaknesses	Rating	Weight	Relative Weight	Score
5. Lack of financial capability	3,17	3,83	0,1025	0,32
6. Lack technology availability	3,17	3,33	0,1077	0,34
7. Lack of Life Cycle Assessment implementation	3,33	3,5	0,1179	0,39
8. Lack of competent internal auditors for ISO 14001	3,17	3,33	0,1025	0,32
<b>Total</b>		<b>13,99</b>	<b>0,474</b>	<b>1,52</b>
<b>Total Internal Factor Score</b>		<b>29,49</b>	<b>1</b>	<b>3,43</b>

The strength analysis shows that the Indonesian food companies management support and commit to implementing this standard. Their commitments are usually set out in their environmental policy (see Table 3). Management commitment is the primary factor for ISO 14001 certification, in line with Pinto et al. (2017). The Indonesian food companies' management encourage the employees to participate in this standard implementation through their environmental policy. Furthermore, the environmental management system also becomes one of the goals of the companies. The second strength is employee involvement that also determines the success of ISO 14001 certification. The experts argue that employees involve in this standard implementation. They are also aware of the benefits they will be received. ISO 14001 implementation needs the management commitment, but the involvement of employees at the lower level that directly relates to the environmental aspects is also prominent. The motivation, engagement, and awareness of the employees are the strengths of the Indonesian food industry. It is contradicted with the result of Carrillo-Labela et al. (2020) that employee motivation and participation became the barriers to ISO 14001 certification in the food industry. The earlier experience of ISO 9001 implementation supports the ISO 14001 implementation. Success in ISO 9001 certification that benefits the industries encourages the industry to implement

ISO 14001 to achieve the same success as the previous certification implementation. Companies benefit from a similar management structure so that they are easier to adapt to ISO 14001 standards. Companies usually integrate ISO 9001, ISO 14001, and OHSAS/ISO 45001 management systems because this integration can benefit in cost and resources. The Indonesian food companies usually do not only implement ISO 14001 but also implement ISO 9001 and other standards (see Table 3).

The result of weakness analysis shows that the lack of Life Cycle Assessment implementation is the main factor that must be improved. The companies should enhance using the Life Cycle Assessment in the environmental aspect determination process. The Life Cycle Assessment perspective is a salient aspect of the planning step of the environmental management system. The companies should consider every step of the product's life cycle include raw material procurement, design, production, transportation, use and processing, and final disposal of waste (ISO, 2015). The second weakness is technology availability. The companies must also be able to provide new technology to run their production operations. Besides production technology, waste management technology must also be appropriate to process waste effectively. The provision of this technology is a challenge for the company because it generally requires a considerable cost. This result in line with Tayo Tene et al. (2018) argument that technology availability became one of the factors that hinder the ISO 14001 implementation. The available technology needs to be maintained to work optimally. Technology selection should consider its performance, maintenance cost, and impact on employees and communities around the company. The cost of implementing ISO 14001 from a system set up, training, certification, and provision of technology is also a big challenge for the company. It is suitable with the argument of Mosgaard & Kristensen (2020). Therefore, in general, small companies will be burdened to implement because of limited funds. The next weakness is the lack of competent internal auditors for ISO 14001. An internal audit is necessary to evaluate the conformity of implemented standards. The experts argue that the number and competency of auditors are inadequate to conduct audits effectively.

Table 5. External factors analysis

<b>Opportunities</b>	<b>Rating</b>	<b>Weight</b>	<b>Relative Weight</b>	<b>Score</b>
1. ISO 14001 deployment requirements for export	3,17	3	0,135	0,43
2. Domestic customer requirement	3	3,33	0,150	0,45
3. External Training institutions availability	3,17	3,33	0,150	0,48
4. External ISO 14001 consultant availability	3	3,33	0,150	0,45
<b>Total</b>		<b>12,99</b>	<b>0,587</b>	<b>1,81</b>
<b>Threats</b>	<b>Rating</b>	<b>Weight</b>	<b>Relative Weight</b>	<b>Score</b>
Lack of government support for the implementation of ISO 14001 with incentives	2,3	2,83	0,1278	0,29
Lack of competent certification bodies	2,83	3,33	0,1503	0,43
Implementation of ISO 14001 is not legal requirement	2,83	3	0,135	0,38
<b>Total</b>		<b>9,16</b>	<b>0,413</b>	<b>1,10</b>
<b>Total External Factor Score</b>		<b>22,15</b>	<b>1</b>	<b>2,91</b>

Table 5 shows that the highest score for opportunities is the availability of external training institutions. The experts argue that training institutions are adequate to be hired by companies to improve their employee's competencies. The needed training includes ISO 14001 standard awareness, environmental aspects determination, cleaner production awareness, internal audit training for ISO 14001, etc. The availability of external ISO 14001 consultants is enough to help the companies setting up the system and implement this standard. ISO 14001 implementation is required by domestic customers. The companies can take advantage of this opportunity to expand their domestic business. The last opportunity is ISO 14001 certification can hinder export barriers, especially to the country destination with high environmental awareness like Europe, Japan, and the USA.

The threats analysis shows that the availability of competent certification bodies should be enhanced. ISO 14001 Certification Bodies accredited by the National Accreditation Body of Indonesia (KAN) are still few, 23 certification bodies. Accredited certification bodies for the scope of the food industry are only ten Certification Bodies. Among

them, eight Certification Bodies domiciled in Jakarta, one in Depok, and one in Yogyakarta. The small number of certification bodies and their concentrated location in Jakarta can make it difficult for companies in remote areas such as companies outside Java to increase the cost burden for accommodation and transportation during the certification process. ISO 14001 implementation is also not a mandatory requirement by the government. The decision to implement this standard depends on the company's policy. They will consider the benefit and cost of this standard implementation. Government support for this standard implementation needs to be improved. Recently, there are no financial incentives offered to companies that implemented ISO 14001. On the other hand, technical incentives are offered to companies who want to implement this standard, namely subsidies for registration, consultation, and training. These technical incentives are provided by the National Standardization Agency of Indonesia (BSN). However, the quota of companies that apply for incentives is limited and prioritized for small and mid-sized companies (SME). The government represented by the National Standardization Agency of Indonesia also gives awards for the companies or organizations considered the best and consistent in implementing SNI, namely the SNI award. But. This award is not specific to SNI ISO 14001 applicants only.

### 4.3 Strategy to Encourage ISO 14001 Certification

From the results of internal and external factor analysis, several strategies can be considered for the improvement of ISO 14001 certification implementation in the food industry as described in Table 5 as follows:

Table 5. SWOT matrix

	<p><b>Strengths (S):</b></p> <ol style="list-style-type: none"> <li>1. Have ISO 9001 certification experience before applying ISO 14001</li> <li>2. Management's support and commitment to the implementation of ISO 14001</li> <li>3. Employee motivation, engagement, and awareness</li> <li>4. The implementation of environmental management is one of the company's goals</li> </ol>	<p><b>Weaknesses (W):</b></p> <ol style="list-style-type: none"> <li>1. Lack of financial capability</li> <li>2. Lack of technology and technical capabilities for ISO 14001 implementation</li> <li>3. Lack of Life Cycle Assessment implementation</li> <li>4. Lack of competent internal auditors for ISO 14001</li> </ol>
<p><b>Opportunities (O):</b></p> <ol style="list-style-type: none"> <li>1. ISO 14001 deployment requirements for export</li> <li>2. Domestic customer requirement fulfillment</li> <li>3. Ease of finding ISO 14001 implementation training institutions</li> <li>4. ISO 14001 consultant availability</li> </ol>	<p><b>(S-O) Strategy</b></p> <p>Grant export barrier waivers to companies that have implemented environmental management systems well.</p>	<p><b>(W-O) Strategy</b></p> <p>Improve the company's resource capacity in the implementation of ISO 14001.</p>
<p><b>Threats (T):</b></p> <ol style="list-style-type: none"> <li>1. Lack of government support for the implementation of ISO 14001 with incentives</li> <li>2. Lack of competent certification bodies</li> <li>3. Implementation of ISO 14001 is not a legal requirement</li> </ol>	<p><b>(S-T) Strategy</b></p> <p>Improve the number of competent ISO 14001 certification bodies.</p> <p>Strengthen environmental regulations to improve sustainable practices in the corporate environment.</p>	<p><b>(W-T) Strategy</b></p> <p>Provide incentives for ease of capital or soft loans to companies for environmental management systems development.</p>

Strategies that can be suggested from the results of SWOT analysis are as follows:

1. S-O Strategy  
Provide export barrier relief for companies that have implemented an environmental management system well. Export bottleneck relief is given to companies that have successfully obtained ISO 14001 certification, thus encouraging companies that have not been certified to implement ISO 14001 certification.
2. W-O Strategy  
Improve the company's resource capabilities, includes financial, technological, and employee competencies for ISO 14001 implementation. This action can be done by providing financial assistance, information technology, and improving the company's competence in terms of technology and environmental management.
3. S-T Strategy  
Increase the number of competent ISO 14001 Certification Bodies. The availability of ISO 14001 Certification Bodies should be improved to give better access for certification.  
  
Strengthen environmental regulations to improve sustainable practices in the corporate environment. Regulation of the environment can be one of the external pressures on companies to implement ISO 14001. In general, the company will strive to comply with the rules or requirements set by the government.
4. W-T Strategy  
Provide incentives for ease of capital or soft loans to companies for the development of environmental management systems. The financial benefit is one of the boosts that can improve the implementation of ISO 14001.

## 5. Conclusion

This paper provides an overview of the internal and external factors that influence ISO 14001 certification in the Indonesian food industry. The strengths consist of the experience of ISO 9001 certification, management support and commitment, employee motivation, participation and awareness, and the implementation of environmental management is the company's goal. The weaknesses consist of lack of financial capability, lack of technology availability, lack of Life Cycle Assessment implementation, and inadequate internal auditors. The opportunities consist of export access opportunities, customer requirements fulfillment, availability of ISO 14001 training institutions, and availability of ISO 14001 consultant support. The threats consist of lack of government support, lack of competent certification bodies, and the application of ISO 14001 that is not a legal requirement. Besides that, this paper also provides some strategic alternatives for improving the ISO 14001 certification in the food industry. The alternative strategies consist of grant export barrier waivers to companies that have implemented environmental management systems well, improve the company's resource capacity in the implementation of ISO 14001, improve the number of competent ISO 14001 certification bodies, strengthen environmental regulations to improve sustainable practices in the corporate environment, provide incentives for ease of capital or soft loans to companies for environmental management systems development.

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