



Implementation of Corporate Social Responsibility in The Environmental Field of PT JAS MULIA in Minangatallu Village, Sukamaju Sub-District, North Luwu District

Asbudi Asbudi¹, Sidik Sidik², Djuanda Nawawi¹, Indar Indar¹, Luhur Luhur¹

¹ Government Science, Faculty of Social and Political Sciences, Hasanuddin University, Makassar, Indonesia

asbudi456@gmail.com

² Government Science, Faculty of Social and Political Sciences, Universitas Muhammadiyah Makassar,

Makassar, Indonesia s

Abstract. The industrial sector and the business world contribute greatly to the national economic growth of the Indonesian state. This contribution is balanced with the exploitation of natural resources by companies, especially by large companies, causing environmental damage and destroying social order. PT JAS MULIA as a company engaged in the palm oil management industry in its operations does not pay much attention to environmental impacts caused by production waste, causing environmental pollution. The government supports environmental empowerment through corporate social responsibility (CSR), therefore PT JAS MULIA as a company is obliged to implement CRS to deal with environmental pollution. This study aims to determine the implementation of PT Jas Mulia's Corporate Social Responsibility for the Environment in Minangatallu Village, Sukamaju District, North Luwu Regency. The research method used in this research is Qualitative by using primary data and secondary data. The data is then analyzed descriptively qualitatively, namely analyzing all the data collected by the author and then displayed in sentence form according to the results of the interview. The results showed that the implementation of PT Jas Mulia's Corporate Social Responsibility for the Environment in Minangatallu Village, Sukamaju District, North Luwu Regency has not been implemented. Efforts to deal with environmental pollution caused by PT. JAS MULIA Palm Oil Mill waste in the community are still in the planning stage and until now nothing has been realized by PT. JAS MULIA.

Keywords: Implementation, Corporate Social Responsibility, Environmental Pollution.

1 Introduction

Rahardjo [2] argues that Industry is one sector that has an important role in the development of a region and increasing people's income. Economic development, among others, through industry in a country in a long-term period will bring fundamental changes in the economic structure of the country and its people, namely changes from a traditional economy focused on the agricultural sector to a modern economy dominated by the industrial sector, the government's point of view, industrialization is often considered as an entry point to bring society towards prosperity, at least as a driving force in economic development. The industrial and business sectors contribute greatly to the national economic growth of Indonesia. This contribution is balanced with the exploitation of natural resources by companies, especially by large companies, causing environmental damage and destroying social order. Sustainable exploitation of natural resources can cause conflicts between companies and communities triggered by demands from communities in the exploited environment [7].

Seeing this situation, environmental and community empowerment is an important thing that must be carried out by the community and the government. The government supports environmental empowerment through corporate social responsibility, which is called Corporate Social Responsibility (CSR). Corporate Social Responsibility (CSR) can be used as an alternative that should be developed to divide the direction of corporate responsibility for various social and environmental issues. CSR can be used as a strategy for the company's alignment with the community and the environment, as well as a form of activity to maintain and make efforts against the possibility of negative access to industrialization. However, not a few companies in the community almost bring negative impacts, even though they have benefits for welfare and development. With Law No. 40 on Limited Liability Companies enacted in 2007, and various awards held, such as the Ministry of Environment's Corporate Performance Assessment Program in Environmental Management (PROPER), is a form of government affirmation of the importance of CSR implementation and even the Government of Indonesia actually establishes an operational framework in the form of Government Regulation No. 47 of 2012 concerning Social and Environmental Responsibility. Article 74 paragraph 1 clearly states that "Companies that carry out their business activities in the field of and/or related to natural resources are obliged to carry out social and environmental responsibilities. Basically, the obligation stated in Law No. 40 must be interpreted as a company's need to implement CSR programs in the form of community development, because inevitably the company will adapt to the surrounding social environment and at the same time to gain the trust of the community. In Indonesia in general, there are many industries that have a social impact on society, both negative and positive. Among other things, PT Freport, PT Lapindo, PT Vale, and so on, these industries do not neglect the concept of CSR. This has resulted in problems between the industry and the local community where the industry operates.

One of North Luwu's commodities is the plantation sector. In the plantation sector, oil palm is one of the leading plantation commodities and North Luwu Regency is the largest oil palm developing district in South Sulawesi with a total production of 35,314.52 tons. data The area of Oil Palm plantations in North Luwu reached 21,375.34 hectares, with an average production of 211,210.89 tons per year. Sukamaju sub-district as the research location has the largest oil palm plantation, reaching 4,709 hectares, and then other sub-districts including Tanalili 3,691 hectares, Baebunta 2,860 hectares, Bonebone 2,843 hectares, Mappedeceng 2,138 hectares. Malangke 1,899 hectares, Masamba 1,250 hectares, West Malangke 953 hectares, Sabbang 183 hectares, and Limbong 10 hectares [3]. There are at least three companies engaged in the plantation sector. One of them is a company engaged in the palm oil industry, PT JAS MULIA, which is located in Minangatallu Village, Sukamaju District, one of the districts in North Luwu. Since its operation on 5/15/2017, PT Jas Mulia Palm Oil Mill began to receive complaints from the community regarding poor waste management, where the waste produced by this PKS is disposed directly in the watershed in Minangatallu Village which causes pollution to the environmental conditions of the river flow, due to the absence of special irrigation channels made by PT JAS MULIA to dispose of its production waste.

This pollution causes damage to the ecosystem in the river, further causing the death of aquatic biota around the river flow. In addition, this also has an impact on the community's agricultural sector, causing farmers to discourage them from planting rice together, due to the contamination of the river with oil and mud, which is the main irrigation channel. In addition to the liquid waste polluting the Minangatallu watershed, communities around Sukamaju sub-district also complained about air pollution. The presence of PT Jas Mulia in North Luwu as one of the Palm Oil industries in North Luwu has answered the expectations of Palm Oil Farmers in North Luwu. Therefore, with its presence, the palm oil industry must be a support for the welfare of the community, especially the people around the industrial area. Based on the problems mentioned above, this is the basis for consideration to conduct a research study on the Implementation of Corporate Social Responsibility for the Environment of PT Jas Mulia in Minangatallu Village, Sukamaju District, North Luwu Regency.

2 Literature Review

2.1 Implementation

Implementation is the process of transforming a plan into practice. People often assume that implementation is only the implementation of what decision makers decide, as if this stage has little effect. However, in reality it can be seen for yourself that the good plans that have been made have no use if they are not implemented properly and correctly. So that to achieve the expected results, an evaluation is carried out to measure the success rate of the implementation of a policy [4].

According to George Edward III [1] argues that policy implementation is a crucial process because how good a policy is if it is not well prepared and planned for implementation, then what is the purpose of public policy will not be realized. Vice versa, no matter how well prepared and planned the policy implementation is, if the policy is not formulated properly, what is the policy objective cannot be achieved either. Therefore, to achieve policy objectives, policy formulation and policy implementation must be well prepared and planned. Evaluation of implementation according to Edward states that there are 4 (four) crucial variables in implementation, namely Communication, Attitude, Resources, Bureaucratic Structure.

2.1.1 Communication

Communication is an activity that causes other people to interpret an idea / idea, especially those intended by the speaker or writer through a system that is *common* (*common*) either with symbols, signals, or behavior. Communication affects the implementation of public policies, where poor communication can have adverse effects on policy implementation. Dimensions of communication that can affect the implementation of public policies include: transmission, consistency, and clarity. Achieving successful implementation of public policy requires implementers to know what to do clearly; policy goals and objectives must be informed to the *target group* so as to reduce the gap between policy plans and implementation.

2.1.2 Attitude

Attitude is the character and characteristics possessed by policy implementers, such as commitment, discipline, honesty, intelligence, and democratic nature. If the policy implementer has a good attitude, then he is strongly suspected of carrying out the policy well, on the other hand, if the policy implementer has an attitude or perspective that is different from the intent and direction of the policy, it is possible that the policy implementation process will not be effective and efficient.

2.1.3 Source

Policy implementation must be supported by the availability of resources (human, material, and methods). The implementation of public policies needs to be carried out carefully, clearly, and consistently, but if the implementers lack the necessary resources, then the implementation of policies will tend not to be implemented effectively. Without the support of resources, policies will only become documents that are not realized to provide solutions to problems in society, or efforts to provide services to the community.

2.1.4 Bureaucratic Structure

Bureaucratic structure is the authority / legitimacy for implementers in implementing policies that are determined politically. The main characteristics of the bureaucracy are generally contained in work procedures or *Standard Operating Procedures (SOP)* and organizational fragmentation. The four factors above must be implemented simultaneously because between one and the other have a close relationship. The goal is to improve understanding of implementation.

2.2 Corporate Social Responsibility

Article 1 point 3 of Law No. 40/2007 on Limited Liability Companies states the definition of corporate social responsibility/CSR is the Company's commitment to participate in sustainable economic development in order to improve the quality of life and the environment that is beneficial, both for the company itself, the local community, and society in general.

ISO 26000 in [8], explains that CSR is the responsibility of an organization to society and the environment for the impact of decisions and activities carried out, through ethical and transparent behavior in contributing to sustainable development, health and welfare of the community, taking into account stakeholder expectations, where in its implementation it meets applicable rules and is consistent with international norms and is integrated in all parts of the organization. The agreement in ISO 26000 covers 7 core subjects in CSR, including: Organizational governance, which is the system of making and implementing company decisions in order to achieve its goals; Human rights, which are the basic rights that all people are entitled to as human beings, including civil, political, economic, social and cultural rights; Labor (labor practices), all policies and practices related to the work carried out by the company; Environment (the environment), which includes the impact of company decisions and activities on the environment; Fair operating procedures, which are the ethical behavior of the organization when dealing with other organizations and individuals; Consumer issues, which are the responsibilities of companies providing goods / services.

2.3 Environmental Pollution

The environment is a place of life as well as a place for waste from human activities. The environment has the ability to survive in its state and neutralize itself back to its initial state if the waste is still within the carrying capacity of the environment [9]. The environment can receive waste from households and industries in the environment. This causes changes in the state of environmental quality both water, soil and air including flora, fauna, and micro organisms. It is explained in UUPPLH no. 4 of 1982 that

environmental pollution is the entry or entry of living things, substances, energy, and / or other components into the environment, or changes in environmental order by human activities or natural processes, so that environmental quality drops to a certain level which causes the environment to be less good or can no longer function in accordance with its designation.

2.4 Framework

In line with the development of *Corporate Social Responsibility*, companies began to care about *Corporate Social Responsibility programs* that pay attention to the company's environment. This is in accordance with the Implementation theory, which says that implementation is a crucial process because how well a policy is prepared and planned if its implementation is not well prepared and planned, then what is the purpose of public policy will not be realized. This research was conducted to provide an overview of the practice of disclosing social responsibility carried out by companies, especially on the issue of environmental disclosure which is part of corporate responsibility. Environmental issues began to be in the spotlight due to the mismatch between environmental management procedures and the reality of companies in managing their environment. The government has regulated environmental preservation through legislation. The implementation of *Corporate Social responsibility* by PT JAS MULIA in environmental management is a very important element in terms of disclosing corporate responsibility for sustainable development in order to maintain and improve the quality of the environment that is beneficial, both for the Company itself, the local community, and society in general as stated in Article 1 point 3 of Law Number 40 of 2007 as described above. So that the hope of avoiding the impacts caused by the company can be minimized or even eliminated by the company.

3 Research Methods

The research used is descriptive method. The population in this study were all government officials in society and member PT JAS MULIA, Determination of research subjects or informants is based on a *purposive sampling* approach. data collection techniques used, Interviews, Observation and Documentation.

4 Research Results

4.1 Implementation of Corporate Social Responsibility

The previous discussion on the Implementation of Corporate Social Responsibility, in Article 1 point 3 of Law Number 40 of 2007 concerning Limited Liability Companies states the definition of corporate social responsibility or CSR is the Company's commitment to participate in sustainable economic development in order to improve the quality of life and the environment that is beneficial, both for the Company itself, the local community, and society in general. Furthermore, it is explained again in Government Regulation No. 47 of 2012 concerning Social and Environmental Responsibility, in article 74 paragraph 1, it is clearly stated that "Companies that carry out social and environmental responsibility are entitled to the following business activities in the field of and/or related to natural resources must implement social and environmental responsibility. The South Sulawesi government also reaffirmed the obligation to implement Corporate Social Responsibility as stated in the regulation of the Governor of South Sulawesi Number 45 of 2012 which states that every company established in South Sulawesi is required to carry out corporate social responsibility.

The demand for Corporate Social Responsibility or corporate social and environmental responsibility continues to grow. Responsibility is not only for the development of the community around the company's operations, but also related to all stakeholders, including consumers. In general, Corporate Social Responsibility is an improvement in the quality of life, meaning the ability of humans as individual members of society to be able to respond to existing social conditions, and can enjoy and utilize the environment including changes that exist while maintaining. The application of corporate social care and responsibility must be appropriate for the community and well realized, so that no parties are harmed, and positively expected to improve the progress and welfare of the community in the company environment. Corporate Social Responsibility is one of the factors of business sustainability by increasing trust in external parties, especially in the community. Because with the implementation of Corporate Social Responsibility, companies are required to be more responsible for the environment and the community around the company. The implementation of Corporate Social Responsibility by PT JAS MULIA in certain areas such as education, health, agriculture, sports, and general social activities has been carried out quite well where in the management of CSR PT JAS MULIA partners with the Minangatalu Village Head. Therefore, the implementation of Corporate Social Responsibility can be used as the company's social capital to increase public trust in the company's commitment to implement corporate social responsibility. Corporate Social Responsibility categorized as social capital is when the company is able to convince the community that the establishment of the company can contribute to the community, such as: providing financial assistance to underprivileged communities, improving infrastructure, providing capital assistance, providing scholarships for underprivileged and outstanding students and students, caring for public health and so on.

The following are some of PT JAS MULIA's *Corporate Social Responsibility* implementation programs in several fields, including:

No.	Activity Name	Destination	Target	Total
1	Establishing a School	Provide educational facilities for underprivileged children around PT JAS MULIA	Community in Sukamaju Sub-district	1 school
2	Mosque Dome Assistance	Improving Public Facilities	Place of WorshiP	1 Dome
3	Free Medicine	Providing free medical services	Health	2 treatment services
4	Participate in Regional activities	Helping to Make Regional Activities Successful	General Public	2 Activities
5	Superior Palm Seedlings	Providing quality palm seedlings	Farmers	5000 superior seedlings
6	Job Field	Creating jobs for the surrounding community Company	Economy	182 residents of Kec. Sukamaju
7	Badminton Court	Creating Sports Facilities to support the talents of the younger generation	Sports	1 Badminton Court

Figure. 2. CSR program of PT JAS MULIA.

The table above proves that the implementation of PT JAS MULIA's CSR has been carried out in several fields but specifically for the environmental field, nothing has been done considering the environmental pollution problems caused by PT JAS MULIA's palm oil production waste which has a negative impact on the community environment.

4.2 Implementation of Corporate Social Responsibility for the Environment of PT JAS MULIA in Minangatallu Village, Sukamaju District, North Luwu.

So far, companies are considered as institutions that can provide many benefits to society such as: providing employment opportunities, providing goods needed by the community

for consumption, paying taxes, contributing funds, and others [6]. With regard to Corporate Social Responsibility, as previously explained, it has actually been strengthened operationally in article 1 paragraph 3 of Law Number 40 of 2007, the content of the article clearly shows that companies have responsibilities not only to shareholders and creditors, as has been the case so far, but also to the community. Harapah [6] argues that The company is also responsible for the surrounding community, which is directly and indirectly influenced and affects the company's operations. In addition, companies are also responsible for the community environment in a broader sense within an infinite radius, considering that companies have a responsibility for development. However, behind all of that, the existence of the company has also caused various social and environmental problems such as: air pollution, poisoning, noise, discrimination, coercion, arbitrariness, illicit food production and other forms of negative externalities.

One of the problems caused by a company is environmental problems that are growing rapidly and are characterized by environmental pollution and destruction activities that are closely related to the development of technological advances that are the success of multi-aspect national development activities. Aspects of technological progress have an impact not only positive but also negative impacts, especially for environmental preservation. With the occurrence of environmental pollution, it certainly has a negative impact on the survival of humans or the surrounding community. Usually environmental pollution occurs due to the production process. PT JAS MULIA as one of the companies engaged in the production of oil palm in Minangatallu Village, Sukamaju Sub-District, North Luwu Regency over time the production carried out has had a negative impact on the community around the company's operations, as for the impacts caused by PT JAS MULIA, namely water pollution and air pollution. The presence of PT JAS MULIA does have a positive impact on the community, especially those who work as oil palm farmers and also for people who are unemployed. However, behind the positive impact, PT JAS MULIA also has a negative impact on the community around the company, which is caused by the waste produced by the PT JAS MULIA palm oil mill which pollutes the community environment, where the factory waste flows into the river and irrigates rice fields belonging to the community around the company so that the river flow is polluted and the rice fields are damaged which results in the harvest of rice farmers in Minanga Tallu village decreasing which was originally around 50-55 sacks / kg down to 28 sacks / kg. From the results of the research in general PT JAS MULIA for environmental pollution problems has not carried out Corporate Social Responsibility or social responsibility for the environment. From the results of this study by interviewing 7 informants in general, 90% said the company had not carried out Corporate Social Responsibility activities for the pollution. In connection with this problem, the local government will review and temporarily stop the production process until the pollution problem can be resolved.

This research uses George C Edward III's theory on the Implementation of PT JAS MULIA's Environmental Corporate Social Responsibility in Minangatalu Village, Sukamaju, North Luwu Regency. This theory states that there are 4 factors that must be considered in policy implementation, namely Communication, Attitude, Resources, and Bureaucratic Structure. The results of this study will discuss how these four factors answer the research objectives. The following are the results of interviews based on 4 research indicators.

1. Communication

This section discusses the form of socialization or notification that has been done by PT JAS MULIA related to *Corporate Social Responsibility* on environmental issues to the community, sources of information that affect informants' knowledge of the existence of PT JAS MULIA's environmental *Corporate Social Responsibility*. It also discusses the internal communication between the company and the government, the company and the community, as well as the company and the government and the community. Based on in-depth interviews conducted with several informants, in this case the Village Head, Hamlet Head and residents said that there has been no provision of information or socialization from PT JAS MULIA regarding the company's obligation to carry out *Corporate Social Responsibility*. for the pollution problem. researcher received information that the company had never communicated with the village head regarding this CSR planning. Meanwhile, the company said that it had only communicated with certain parties. which consist of several questions to extract information from informants regarding the communication between PT JAS MULIA and the community related to *Corporate Social Responsibility*, it can be concluded that PT JAS MULIA's communication with the community during the inauguration did not go well according to the informant's statement where some claimed to have never communicated directly and received socialization related to *Corporate Social Responsibility* and there was no call through a direct letter from PT JAS MULIA officially for corporate responsibility regarding pollution due to the company's productionwaste.

2. Attitude

One of the things that affects policy implementation is the attitude of the implementer in implementing a policy. The implementer in question is starting from the highest leadership in a work unit and all people who are members of the work unit, all of whom must support each other and together in carrying out a policy for the common good. Implementation according to George C. Edward if you want to succeed effectively and efficiently in carrying out a policy, implementers not only know what they have to do, but they must also have the will to implement the policy. A policy is sometimes not implemented properly because there are still differences in interpretation and personal or organizational interests that take precedence over common interests. The following are the results of the interviews regarding the community's and PT JAS

MULIA's response to the environmental pollution and CSR. Based on the results of in-depth interviews about the community's attitude in responding to environmental pollution caused by PT JAS MULIA's waste, the community said that the pollution disrupted community activities and the community's rice fields. From several research informants, they received information that environmental damage caused by company waste had a huge impact on the agricultural sector, especially rice fields, which caused many losses to farmers due to damaged harvests. Meanwhile, the company said that the pollution flowing into the river was beyond their control due to accidental elements, the company is trying to improve waste disposal procedures. From the answers, which consist of several questions regarding informants' attitudes regarding environmental pollution due to PT JAS MULIA's waste in Minangatallu Village, Sukamaju Kec, North Luwu Kab, most informants stated that it was disturbed and detrimental to community activities and damaged the rice fields of the community around the company.

3. Resources

Based on in-depth interviews with informants, in this case residents revealed that the currently available human resources are sufficient, there is no need for additional human resources, it is enough to involve existing employees or human resources to carry out this. Researchers received information from the local community that there were already plenty of resources, but they only saw that the waste continued to flow into the river without special treatment. Meanwhile, the company JAS MULIA said that the company's human resources were adequate and ready to take part in carrying out the program to protect the surrounding environment so that pollution does not occur again. From the answers, related to the availability of resources owned by the company at this time both human resources and other resources. Most of the informants from the community and PT JAS MULIA said that the resources related to the implementation of *Corporate Social Responsibility* are adequate. Therefore, there is no reason not to implement the CSR so that the implementation can be accelerated and the environment can be sterilized from polluting waste. No matter how good the concept and objectives of a policy and the willingness or attitude to carry it out seriously, but not supported by good resources.

4. Bureaucratic Structure

Based on the results of interviews with the Head of the Hamlet, he said that there is no need for a special bureaucratic structure to implement CSR or social and environmental responsibility programs. Meanwhile, the company said that in its bureaucratic structure they were ready to carry out a social environmental responsibility program in accordance with their duties and functions within the company. From the answers, we can conclude that there is no need for a special bureaucratic structure and all should be involved in CSR or corporate social and environmental responsibility directly. Even if implementers feel that they know

what and how to do it, have the desire to do it and have sufficient resources, implementation will still fail if the existing bureaucratic structure hinders the coordination needed to implement the policy. Complex policies require the cooperation of many people, the waste of resources has the potential to affect individuals and will generally affect the implementation results.

5 Conclusion

Based on the results of research and discussion regarding the Implementation of *Corporate Social Responsibility for the Environment* of PT JAS MULIA in Minangatalu Village, Sukamaju, North Luwu Regency, it can be concluded that PT JAS MULIA has not carried out *Corporate Social Responsibility* or responsibility for the environment. JAS MULIA's social responsibility in the environmental sector is related to environmental pollution caused by PT JAS MULIA's palm oil mill waste. The CSR implementation will be carried out with the aim of keeping industrial activities in the area running without damaging the environment.

References

1. Ramdhani, A., Muhammad, A.: General Concept of Public Policy Implementation (2017). [http:// digilib.uinsgd .ac .id. pdf](http://digilib.uinsgd.ac.id.pdf). Accessed on August 10, 2023.
2. Benu, et al.: Impact of PT Global Coconut Industry on the Community in Radey Village, Tenga District, South Minahasa Regency. *Agri-socioeconomics* (2017). [https:// ejournal.unsrat. ac. id/ index. php/ jisep/ article/ view/ 14933](https://ejournal.unsrat.ac.id/index.php/jisep/article/view/14933). Accessed on July 8, 2023.
3. Badan Pusat Statistik (BPS).: diakses dari <http://www.bps.go.id/> (2023), Accessed on July 8, 2023
4. Dachi, R. A.: *Health Policy Process and Analysis (A Conceptual Approach)*. Deepublish, Yogyakarta (2017). Accessed on July 10, 2023.
5. Mandala, et al.: Implementation of Sailing Approval Letter (SPB) Issuance Policy. *Journal of Government Science: Studies in Government Science and Regional Politics* (2016). [http://e- journal. Ups teal. ac. Id /JIP/ article/ view/13](http://e-journal.ups.tegal.ac.id/JIP/article/view/13). Accessed on August 10, 2023.
6. Puspita, I. K., Lailatul, A.: The Effect of Corporate Social Responsibility Disclosure and Capital Structure on Company Profitability (2015). [http://ejournal.unp.ac.id/students/index.php/akt/ article/view/869](http://ejournal.unp.ac.id/students/index.php/akt/article/view/869). Accessed on September 12, 2023.
7. Risal., Prabawati, Indah.: Implementation of Corporate Social Responsibility of the Regional Drinking Water Company (PDAM) Surya Sembada Surabaya City (Study on Ready to Drink Water Faucets (Kasm) in Bungkul Park Surabaya) (2016). [http:// student journals. unesa. ac. id](http://studentjournals.unesa.ac.id). Accessed on August 11, 2023.
8. Setiawan, et al.: Mapping Basic Infrastructure and Community Environment Around ITS Surabaya Campus. *IPTEK Journal of Proceedings Series* (2017). [http:// iptek.its.ac id/index.php/jps/article/viewFile/ 3341/ 2656](http://iptek.its.ac.id/index.php/jps/article/viewFile/3341/2656). Accessed on June 11, 2023.

9. Sumampouw, O. J., Risjani, Y.: Environmental Pollution Indicators. Deepublish, Yogyakarta (2018).
10. Law Article 1 point 3 Number 40 Year 2007 on Corporate Social Responsibility.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

