

**JURNAL CYBER PR**  
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**The Social Impact of Electrifying Agriculture Program**

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Submitted: March 2026, Accepted: May 2026, Published: June 2026

**Abstract** - Sangkanjoyo Village is a productive agricultural area in Pekalongan Regency with considerable potential, however its also faces several challenges, including high operational costs and low productivity only about 2.3 tons per year compared to 4.4 tons per year in surrounding areas (LKjIP, 2024). To address these challenges, PT PLN (Persero) UID Central Java and D.I. Yogyakarta initiated the Electrifying Agriculture CSR program to enhance energy efficiency in agriculture through electricity-based technologies. This study describe the social impact of the program using the Social Impact Taxonomy Theory through a qualitative approach involving interviews, observations, and documentation. This study contributes to the public relations field by understanding the social impact of CSR implementation and offers novelty through a beneficiary-based perspective. The research findings show that the social impact of the program can be observed through ten attributes: context (Social Policy and Welfare), who (Farming Community), what (Community Organization, Community Cohesion, Community Empowerment, etc), causing (company's SDG-related policies, interventions, and business strategy), how (positive by empowering community), direction (positive by providing benefits and increasing productivity), temporality (given point in time and future outcomes projected for 2026), magnitude (strength and broad), intention (intended and unintended), and nature (real/visible and unobservable).

**Keywords:** Corporate Social and Responsibility; Electrifying Agriculture; National Electricity Company (PLN); Public Relations; Social Impact

**Abstrak** - Desa Sangkanjoyo merupakan wilayah agraris produktif di Kabupaten Pekalongan yang memiliki potensi besar, namun juga menghadapi berbagai permasalahan seperti biaya operasional tinggi dan rendahnya produktivitas, hanya sekitar 2,3 ton per tahun dibandingkan 4,4 ton per tahun di wilayah sekitarnya (LKjIP, 2024). Sebagai upaya menjawab tantangan tersebut, PT PLN (Persero) UID Jawa Tengah dan DI Yogyakarta menginisiasi program CSR Electrifying Agriculture untuk meningkatkan efisiensi energi di sektor pertanian melalui pemanfaatan teknologi berbasis listrik. Penelitian ini mendeskripsikan dampak sosial program tersebut dengan Teori Social Impact Taxonomy melalui pendekatan kualitatif yang melibatkan wawancara, observasi, dan dokumentasi. Penelitian ini berkontribusi pada bidang public relations melalui pemahaman mengenai dampak sosial dari implementasi CSR serta menawarkan kebaruan melalui perspektif dari penerima manfaat. Hasil penelitian menunjukkan bahwa program dampak sosial pada program Electrifying Agriculture dilihat dari sepuluh atribut, antara lain context (Social Policy and Welfare), who (Komunitas petani), what (Community Organization, Community Cohesion, dan lainnya), causing (kebijakan terkait SDGs, intervensi, dan strategi bisnis perusahaan), how (berdampak positif melalui pemberdayaan komunitas), direction (positif melalui pemberian manfaat dan peningkatan produktivitas), temporality (berdampak secara cepat dan program hingga tahun 2026), magnitude (strength and broad), intention ((intended and unintended), and nature (real/visible and unobservable).

**Kata Kunci:** Dampak sosial; Electrifying Agriculture; Humas; Perusahaan Listrik Negara; Tanggung Jawab Sosial Lingkungan

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## Introduction

Sangkanjoyo Village is a productive agricultural area located in Pekalongan Regency, Central Java, encompassing approximately 148 hectares of rice fields, with most of its residents working as farmers. The rice fields are traversed by a river that serve as a potential source of irrigation, providing the village with considerable opportunities to achieve high agricultural productivity. Despite its great potential, the agricultural sector in this region faces several challenges, including high operational costs due to the use of fossil-fueled machinery, reliance on manual irrigation systems, and low energy efficiency. These constraints have contributed to below-average rice productivity of approximately 2.3 tons per year, compared to 4.4 tons per year in surrounding areas (LKjIP, 2024). Consequently, the selling income from unhusked rice remains low, reaching only IDR 1.3 billion, while the limited harvest frequency of one to two times per year has contributed to low agricultural income, which amounted to IDR 1.3 billion in 2021 (PLN Internal Data, 2024)

Based on internal company data, in 2024 the frequency of harvests and income has increased significantly. The frequency of harvests has increased to three times a year. Agricultural production has increased to 3.5 tons. Revenue from grain sales also increased substantially to IDR 2.4 billion. Overall, revenue from agricultural production has experienced a huge surge, reaching 19.1 billion (PLN Internal Data, 2024). As a company responsible for providing electricity nationwide, PLN seeks to ensure that electricity not only functions as a basic necessity, but also as a strategic instrument for improving community welfare by stimulating economic activities (Kurniawan & Hidayat, 2021).



Figure 1. The form of CSR assistance implementation provided (Source: PLN Internal Data, 2024)

Therefore, PT PLN (Persero) UID Central Java and D.I. Yogyakarta initiated the Electrifying Agriculture program, which supports increased economic productivity and community welfare in the village of Sangkanjoyo in the agricultural sector. As a program that supports the Sustainable Development Agenda or Sustainable Development Goals (SDGs) pillar 8 on Economic Development, the Electrifying Agriculture program focuses on the use of electrical energy as a technological innovation to support increased yields and productivity in agricultural activities (Alfiani & Hamidah, 2023). The Electrifying Agriculture program has also been implemented in several other regions, including Grobogan, Magelang, and Pekalongan Regency. Each location demonstrates distinct forms of intervention. In Grobogan, a beneficiary received an electricity connection to operate a privately owned rice milling machine (Bahtiar, 2025), in Magelang, simultaneous electricity connections were installed to support orchid farming activities (Saritri, 2024), In Pekalongan Regency, particularly in

Sangkanjoyo Village, beneficiaries have received consistent annual assistance, generating substantial positive outcomes and resulting in a very high Community Satisfaction Index (CSI) score of 90.66 (IKM PLN Report, 2024). PT PLN (Persero) UID Central Java and D.I. Yogyakarta collaborated with the Rukun Karya Farmer Group in Sangkanjoyo Village to provide infrastructure assistance, facilities, and electricity-powered infrastructure in the form of rice mill, electric water pumps, new electricity connections, pest-trapping lights, rice barns, and multipurpose buildings.

Electrifying Agriculture program won the Gold award in the Indonesia Sustainable Development Award (ISDA) by CFDC in 2024. This recognition shows that the program's success is not only evident from the increased productivity and welfare of the community, but also from external assessments of its effectiveness, sustainability, and contribution to the 2030 SDGs (Fardi, 2024). The award serves as proof that the company is capable of serves as a public relations strategy to strengthen the company's positive image through the empowerment of agricultural communities and the improvement of farmers' quality of life through the implementation of the Corporate Social and Responsibility (CSR) program.

Corporate Social and Responsibility (CSR) is defined as a company's commitment to actively participate in achieving sustainable economic development in Indonesia. CSR programs play a strategic role in shaping corporate image and generating mutual benefits when companies demonstrate strong social and environmental concern (Prihastini & Indrayani, 2024). Based on Marszalek's research, CSR is also defined as a corporate obligation to undertake social initiatives that address the interests of communities within the company's operational areas (Pratiwi et al., 2022). Furthermore, CSR is a form of corporate communication activity and a mandatory program that must be implemented by Limited Liability Companies (Perseroan Terbatas), as stipulated in Article 47 of Law Number 40 of 2007 concerning Limited Liability Companies (Company Law) (Nuriyatman et al., 2024). A company is expected to focus more on the social impact of its business activities, rather than focusing solely on the profits it earns (Yusriadi & Prihantoro, 2025). CSR plays an important role in promoting sustainable social and economic development. This demonstrates that CSR generates significant social impacts (Nurozi & Sisdianto, 2024). According to Johnston and Lane, as cited in Johnston et al. (2025) social impact refers to various changes, whether planned or unplanned, anticipated or unanticipated, and positive or negative, experienced by individuals as they live their lives, interact with others, and perform their social roles within society as a consequence of organizational decisions.

Previous studies on CSR have primarily focused on corporate reputation (Yusri et al. (2025) and Karim et al. (2025)), social impacts limited to the "what" attribute (Dandan et al. (2024) and Sengke et al. (2024)), and impacts limited to the "direction" attribute (Harahap et al. (2025) and (Nurozi & Sisdianto, 2024)). Research by Yusri et al. (2025), entitled "The Implementation of the Corporate Social Responsibility (CSR) Concept and Its Impact on Corporate Reputation at PT Riau Andalan Pulp and Paper (RAPP)," demonstrated that the company's CSR programs effectively enhanced public perception. Similarly, The study by (Karim et al., 2025), entitled "Implementation of Corporate Social Responsibility (CSR) in Banking Institutions: Its Impact on Consumer Trust and Corporate Reputation in Batam City," examined the effectiveness of CSR implementation and found that CSR programs increased customer trust, thereby contributing to a positive corporate reputation within the community.

The study by Dandan et al. (2024) on the impact of the Corporate Social Responsibility (CSR) program of PT VDNI on the social impact life of the community explains that the social impacts of PT VDNI's CSR program include improved community welfare, higher educational standards, and the resolution of environmental issues. Similarly, the study by Sengke et al. (2024) on the implementation of CSR at PT PLN UID Suluttenggo in Kampung Bahari

Nusantara found that the social impacts of the CSR program include increased productivity and improved living standards of the community. Both studies examined the social impacts of the program, although their analyses were limited to specific impact attributes.

Furthermore, the research conducted by Harahap et al. (2025) on the analysis of CSR programs generally has a significant social impact on society, especially in terms of improving welfare, productivity, and quality of life. In line with this, the study by (Nurozi & Sisdianto, 2024), entitled “The Role of Corporate Social Responsibility (CSR) in Improving Community Well-being: An Analysis of Social and Economic Impacts,” discusses how CSR programs implemented by several companies generate positive social impacts, particularly in the areas of health, education, and economic empowerment. Both studies emphasize the direction of the social impacts observed, indicating that the impacts are predominantly positive.

Previous CSR research has not specifically focused on the social impacts experienced from the beneficiaries’ perspective, particularly through the lens of Social Impact Taxonomy. Therefore, this study offers a novelty by providing an in-depth analysis of beneficiaries’ experiences to present a more comprehensive understanding of the social impact of the Electrifying Agriculture program implemented by PT PLN (Persero) UID Central Java and the Special Region of Yogyakarta, using Social Impact Taxonomy Theory and its ten attributes: Context, Who, What, Causing, How, Direction, Temporality, Magnitude, Intention, and Nature. This study aims to describe the social impact of the program using the Social Impact Taxonomy Theory. By assessing ten social impact attributes, this study seeks to provide a deeper understanding of how CSR programs influence the social conditions of communities, particularly in Sangkanjoyo Village. In addition, this study contribute to the development of the Public Relations field, particularly in understanding the social impact of CSR programs implementation.

## Methods

This study adopts a qualitative case study approach to comprehensively describe the social impact of the Electrifying Agriculture program in Sangkanjoyo Village. Data sources were obtained through primary sources using interviews and secondary sources using observation and documentation. The research was conducted over a four-month period, from November 2025 to February 2026, through in-depth interviews, observations, and documentation. Informants were selected using purposive sampling, a technique that involves choosing data sources based on specific criteria relevant to the research objectives (Sugiyono, 2023). The informant criteria included beneficiaries of the Electrifying Agriculture program in Sangkanjoyo Village who were involved in the program, actively participated in its implementation, and had experience regarding its impacts. Meanwhile, company informants were selected based on their involvement in the planning, implementation, and evaluation of the Electrifying Agriculture program. Interviews were conducted with 8 key informants, including 6 representatives of the Tani Rukun Karya community, namely 1 community leader, 1 community chairperson, and 4 community members as beneficiaries, as well as 2 key informants from the company, namely the Assistant Manager of TJSL and the supervisor of the TJSL UP3 Pekalongan program.

**Tabel 1.** Informant Data

<b>Informant</b>	<b>Position</b>	<b>Interview Duration</b>
Informant 1	Coordinator of Rukun Karya Farmer Group	1 hr, 2 min, 31 sec
Informant 2	Community Leader	43 min, 7 sec
Informant 3	Community Member	31 min, 7 sec
Informant 4	Community Member	20 min, 24 sec
Informant 5	Community Member	15 min, 27 sec

Informant 6	Community Member	25 min, 11 sec
Informant 7	Asisstant Manager TSJL UID Central Java and Special Region of Yogyakarta	19 min, 18 sec
Informant 8	Supervisor the TJSL UP3 Pekalongan	46 min, 53 sec

Source: processed by the researcher, 2026

Observations were conducted through direct visits to the research site. The researcher observed the facilities provided by the company, including electric water pumps and a rice mill, and directly witnessed agricultural activities carried out by farmers in Sangkanjoyo Village. In addition, the sources of documentary data came from media reports on activity reports, the annual Community Satisfaction Index (CSI) report, and the annual Social Return on Investment (SRoI) report.

Next research procedure is following the data collection process, interview transcripts were coded by categorizing the data based on the ten attributes of Social Impact Taxonomy, namely context, who, what, causing, how, direction, temporality, magnitude, intention, and nature. The analysis technique used in the research on the social impact of the Electrifying Agriculture program was Robert K. Yin's case study data analysis technique using four steps, namely pattern matching, explanation building, time-series analysis, and logic models (Ridlo, 2023). After obtaining the interview results, pattern matching was conducted to categorize the findings based on the 10 attributes of the Social Impact Taxonomy. Subsequently, narrative-based explanation building was employed to explain how and why the identified social impacts emerged. Time-series analysis was used to examine changes occurring before and after the implementation of the program. Meanwhile, logic models were employed to explain the cause-and-effect relationships underlying the program's overall social impacts.

In drawing conclusions, the findings were interpreted based on all credible data collected through in-depth interviews, field observations, and documentation. To ensure the credibility and validity of the findings, data triangulation was employed by comparing information obtained from multiple sources, including interviews with beneficiary farmers, company representatives, field observations, and supporting program documents. Data obtained from beneficiary interviews were verified against information provided by PLN representatives and other supporting sources, such as media reports on program activities, annual Community Satisfaction Index (CSI) reports, and annual Social Return on Investment (SROI) reports. This process was conducted to ensure the consistency and accuracy of the findings regarding the social impact of the Electrifying Agriculture program.

## Result and Discussion

The implementation of the Electrifying Agriculture program in Sangkanjoyo Village demonstrates that technology-based interventions can generate substantial changes in the lives of agrarian communities. According to internal company data, the program has contributed to improvements in the village economy and community welfare, as well as to the emergence of a group of modern pioneer farmers (PLN Internal Data, 2024). To examine these changes comprehensively, this study describe the program's social impacts using the Social Impact Taxonomy developed by Hurst & Johnston (2025). This framework comprises ten attributes that enable a systematic and in-depth assessment of social impacts, including:

### Context (Social Policy and Welfare)

The Electrifying Agriculture program focuses on utilizing technology and innovation to increase agricultural productivity using electrical energy. This is in line with the theory of innovation adoption, which explains the process by which a group accepts and adopts new innovations (Faried et al., 2024). The Electrifying Agriculture Program not only focuses on

generating innovative technological solutions for the agricultural sector but also promotes local economic growth and improves community quality of life. The program contributes to welfare development by supporting farmers livelihoods through increased agricultural productivity, which in turn encourages economic improvement at the village level. This outcome is consistent with the objectives of communication development, which aim to enhance quality of life and community welfare through social, economic, and cultural transformation (Purwanto et al., 2025).

### **Who (Farming Community)**

According to informant 1, a representative of the Rukun Karya Farmer Group, the beneficiaries of this program include the broader community of Sangkanjoyo Village, approximately 90% of whom work as farmers. This statement is supported by informant 7 from PLN, who emphasized that the CSR program implemented by PLN is designed to target communities rather than individuals. Consequently, the Rukun Karya Farmer Group, which consists of more than 200 farmer members, serves as the primary direct beneficiary of the Electrifying Agriculture program in Sangkanjoyo Village. This finding is consistent with the Asset-Based Community Development (ABCD) approach, which emphasizes that every community possesses resources and capacities that can be developed to generate positive social impact (Najamudin & Fajar, 2024).

### **What (Community Organization, Sense of Community, Community Cohesion, Economic, Rural and Agricultural Economic Conditions, Infrastructure and Community Empowerment)**

The results of this study indicate that the Electrifying Agriculture program has generated impacts across several social dimensions of the farming community, including community organization, sense of community, community cohesion, community empowerment, economic conditions, rural and agricultural economic development, and infrastructure improvement. In terms of community organization, the impact is reflected in the collective management of electrical equipment through a contribution-based system among farmers. Informant 3, a member of the farmer group, explained that the operation of electric water pumps requires electricity credit purchased through contributions from several farmers who need irrigation for their rice fields. Furthermore, social impact is also evident in the strengthened sense of community among farmers. According to informant 1, the leader responsible for the farmer group, farmers have begun to develop a more modern mindset as a result of the technological changes introduced through the program. This perspective is supported by informant 6, another farmer group member, who stated that the Electrifying Agriculture program is perceived as increasingly advanced because it facilitates farmers' operational activities. These developments indicate that farmers in Sangkanjoyo Village are experiencing a process of agricultural modernization, characterized by technological advancement and evolving social values that influence their farming practices and production methods (Buana & Apriyani, 2023).

The third impact relates to community cohesion, which is reflected in the development of cooperation, mutual assistance, and social harmony among farmers. These conditions have contributed to the reduction of social conflicts within the farming community. Informant 1 explained that the PLN program has reduced instances of "*gontok-gontokan*," a local term referring to disputes, arguments, or physical confrontations among farmers during the rice planting period. Such conflicts previously occurred due to limited irrigation water availability across farmers fields. Informant 3 further emphasized that these tensions often arose because farmers competed with one another to access irrigation water

The fourth impact concerns community empowerment, particularly in enabling farmers to become more independent and less reliant on middlemen. Informant 1 noted that the introduction of electricity-based agricultural technology has strengthened farmers' bargaining position in determining selling prices with middlemen, as their agricultural products now hold greater economic value. In addition, social impact can also be observed from an economic perspective, particularly in terms of operational cost efficiency. According to informant 3, the use of electric-powered rice milling machines and water pumps has reduced farmers' operational expenses. This view is supported by Informant 6, a member of the farmer group, who stated that farmers have experienced significant cost savings because they previously relied on diesel-powered machines but now utilize electricity. As a result, the reduced operational costs allow farmers to allocate more of their income to other household needs.

The next impact relates to rural and agricultural economic conditions. Based on the company's internal data, agricultural activities in Sangkanjoyo Village have become more productive, with farmers now able to harvest up to three times per year. In addition, the availability of facilities for grain storage and milling, along with electric-powered water pumps and rice mills, has facilitated irrigation and accelerated post-harvest processing. The final impact concerns infrastructure development. Agricultural infrastructure in the village has become more advanced with the introduction of electricity-based farming equipment provided through the program.

### **Causing (the company's implementation of SDG-related policies, interventions, and business strategy)**

Agricultural challenges such as suboptimal productivity, high operational costs, pest infestations, and limited facilities for processing agricultural products have created significant obstacles for farmers in the agricultural sector. In response to these conditions, PT PLN (Persero) UID Central Java and D.I. Yogyakarta, through its service unit, PLN UP3 Pekalongan implemented interventions through its CSR program by providing electricity-based agricultural equipment. These interventions include electric water pumps, rice milling machines, multipurpose buildings, and pest-trapping lights. The findings indicate that these interventions were designed as solutions to both structural agricultural constraints and challenges experienced directly by farmers. This approach aligns with the objectives of Corporate Social Responsibility (CSR), which emphasize responding to the needs of communities within the company's operational areas through initiatives that support sustainable development (Wamea et al., 2023).

The provision of electrical technology, accompanied by socialization and technical assistance, also represents a form of participatory communication that encourages farmers to adopt an empowerment-oriented approach (Rakhmadani, 2021). This participatory process constitutes a key factor contributing to the social impacts experienced by farmers in Sangkanjoyo Village. Furthermore, the program is aligned with Pillar 8 of the Sustainable Development Goals (SDGs), which promotes decent work and economic growth. In addition, informant 7, the Assistant Manager of TJSL, explained that the provision of support in the form of electric pumps, rice mills, and similar equipment is also part of the company's business strategy to increase electricity utilization and sales.

### **How (positive by empowering farming community)**

The impacts of the Electrifying Agriculture program have emerged in a positive manner through the empowerment of the farming community. These impacts are reflected in increased social harmony, reduced dependence on middlemen, greater ease in the use of technology, and improved efficiency in operational costs. The introduction of electricity-based agricultural technology through the Electrifying Agriculture program has influenced not only farmers'

working methods but also their patterns of social interaction. Social harmony among members of the Rukun Karya Farmer Group has strengthened as previous conflicts among farmers have diminished. According to informant 1, farmers frequently organize discussions or gatherings to address issues such as pest management, community service activities, and planting patterns. Similarly, informant 2, the head of the Rukun Karya Farmer Group, explained that farmers have become more organized during planting and land cultivation processes by conducting discussions prior to these activities. These practices contribute to stronger social interaction within the community, as communication is established through both formal and informal channels (Indrayani et al., 2022)

Furthermore, the program has contributed to reducing farmers' dependence on middlemen by strengthening their economic capacity and providing supporting agricultural facilities. Informant 1 explained that the availability of rice milling and storage facilities enables farmers to maintain grain reserves, thereby reducing the pressure to sell their harvests immediately at prices determined by middlemen. This allows farmers to exercise greater control over the timing and pricing of their agricultural products. This finding is supported by informant 8, the TJSL Pekalongan program supervisor, who confirmed that the Electrifying Agriculture program has helped decrease farmers' reliance on middlemen.

The ease of technology utilization and improvements in operational cost efficiency were highlighted by source 1. According to this informant, the use of electric water pumps enables farmers to irrigate their fields more easily and at any time, thereby increasing the frequency of harvests. In addition, the availability of rice milling facilities allows farmers to avoid the relatively high service costs often imposed by middlemen. PLN not only provides assistance in the form of facilities and infrastructure but also offers information and guidance to farmers regarding the proper use of the electrical equipment supplied through the program. As a result, farmers experience greater convenience in agricultural processes, while the efficiency in operational costs contributes to improvements in their overall well-being. Informant 1 further emphasized that the program has significantly influenced the livelihoods of farmers who previously relied on diesel-powered irrigation systems. With the transition to electricity-based technology, agricultural practices have become more modern, practical, and cost-efficient. This transformation aligns with the broader objective of modernization, which seeks to enhance community welfare and quality of life (Buana & Apriyani, 2023).

### **Direction (positive by providing benefits, increasing agricultural productivity, and empowering community)**

The findings indicate that the Electrifying Agriculture program has generated positive impacts, particularly in the form of increased farmer income and higher agricultural yields (PLN Internal Data, 2024). In addition, the program has facilitated farming activities and contributed to improved social harmony within the farming community. A strategically structured CSR program that involves community participation can improve social and economic welfare (Putri et al., 2025). Informant 2, representing the Rukun Karya Farmer Group, explained that farmers in Sangkanjoyo Village have greatly benefited from the Electrifying Agriculture program. According to this informant, the assistance provided by PLN enables farmers to operate rice milling facilities independently after harvest, eliminating the need to travel to other villages for the grain drying and processing stages. Furthermore, Informant 3 stated that relationships among farmers have become more harmonious since the implementation of the Electrifying Agriculture program in Sangkanjoyo Village. This observation was also supported by informant 4, who noted that disputes related to land use for drying harvested rice have no longer occurred.

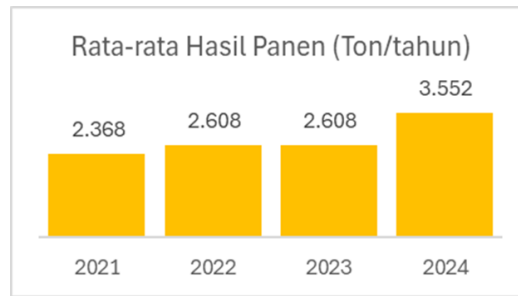


Figure 2. Average increase in crop yields after the implementation of the Electrifying Agriculture program (Source: PLN Internal Data, 2024)

The Electrifying Agriculture program has contributed to the development of the farming community in Sangkanjoyo Village. Agricultural productivity increased significantly, reaching 3,552 tons in 2024, largely due to the improved accessibility and utilization of electricity-based technology. In addition, the program has supported economic improvements through reduced operational costs and increased farmer income. Based on the company's internal data, operational cost savings, particularly in irrigation expenses have become substantial, with irrigation costs reduced to approximately IDR 180,000 per hectare (PLN Internal Data, 2024).

### **Temporality (given point in time and future outcomes projected for 2026)**

The impacts of the Electrifying Agriculture program were realized in the short term and could be observed directly during the early stages of implementation. For example, when the electric pumps were in operation, irrigation for the rice fields became smoother and more reliable. In addition, the efficiency of operational costs was evident from the initial use of the facilities provided by PLN. According to informant 1, a representative of the Rukun Karya Farmer Group, the impacts began to be felt around the sixth month of implementation, particularly during the soil cultivation season. By the end of the planting season, farmers also experienced an increase in crop yields. Furthermore, informant 2 emphasized that the benefits were immediately noticeable when the rice milling facility was first utilized. Company internal data also indicate significant increases in farmer income and crop yields between 2022 and 2024 (PLN Internal Data, 2024). However, interviews revealed that from the end of 2025 to the beginning of 2026, there was a decline in crop yields due to pest infestations influenced by weather conditions. According to informant 2, unfavorable weather conditions can trigger the emergence of pests, which subsequently leads to a decline in crop yields. This statement is supported by informant 4, who explained that the phenomenon is primarily caused by pests such as planthoppers, leafhoppers, and rats. In response to this issue, PLN has provided assistance in the form of pest detection lamps designed to identify the types of pests attacking the rice fields. Informant 1 explained that these pest detection lamps are typically operated at night when the lights are turned on, the pests are attracted and fall into the trap. The Electrifying Agriculture program is projected to continue in accordance with the roadmap until 2026, with the ultimate goal of achieving farmers' independence. However, its impacts are expected to extend beyond this period, as farmers play a crucial role in sustaining food production and supporting the national economy (Buana & Apriyani, 2023).

### **Magnitude (strength and broad)**

The impact of the Electrifying Agriculture program can be categorized as having broad and significant influence, as it has contributed to transforming the agricultural production system into a more modern and efficient one. This transformation has led to several positive outcomes, including increased harvest frequency, higher farmer income, reduced dependence on middlemen, and the mitigation of social conflicts, thereby fostering greater harmony within

the farming community. Such developments reflect the broader process of agricultural modernization, which emphasizes improvements in efficiency and productivity within production systems (Nurrohmah & Hariyanto, 2025). According to informant 1, who is responsible for the farmer group, the program has also generated operational and cost efficiencies that have significantly reduced farmers' expenses in cultivating their fields. As a result, these changes have contributed to improving the overall livelihoods of farmers in the community.

### **Intention (intended and unintended)**

Johnston and Lane (2018) define social impact as intentional and unintentional, as well as anticipated and unanticipated, changes in people lives that affect society (Hurst & Johnston, 2025). Therefore, the result of this study indicate that the Electrifying Agriculture program has generated both intended and unintended impacts. The intended impacts align with the program's initial objectives, which include increased agricultural productivity, higher farmer income reaching IDR 19.18 billion in 2024 and greater efficiency in production costs. In addition, several unintended impacts have emerged during the program's implementation. These include a shift in farmers' mindsets toward more modern agricultural practices and increased solidarity among farmers, which has contributed to the reduction of social conflicts related to agricultural activities. According to informant 1, a representative of the Rukun Karya Farmer Group, farmers have developed a more modern outlook and now possess stronger bargaining power in agricultural transactions. This observation is supported by informant 3, who explained that after the introduction of electric water pumps, farmers no longer compete for irrigation water. Previously, disputes frequently occurred due to the limited and uneven distribution of water resources.

### **Nature (real/visible through the provision of electric rice mills, electric water pumps, new electricity connections, pest-trapping lights, rice barns, and multipurpose buildings and unobservable through experienced through changes in farmer's mindsets)**

According to Latane (1981), social impact represents behavioral changes resulting from the real, implied, or imagined actions of others (Hurst & Johnston, 2025). The impacts of the Electrifying Agriculture program can be observed in both visible and invisible forms. The visible impacts are reflected in the provision and utilization of electricity-based agricultural facilities, including electric rice mills, electric water pumps, new electricity connections, pest trap lights, rice barns, and multipurpose buildings. These facilities contribute to operational cost savings and increased farmer income. According to informant 1, the use of electric pumps has reduced operational costs in irrigation activities. This statement is supported by informant 2, who noted that the cost difference between diesel and electricity reaches approximately IDR 100,000, thereby reducing overall agricultural operational expenses in Sangkanjoyo Village. In addition to these tangible outcomes, the program has also generated intangible impacts, particularly in the form of changes in farmers' mindsets. Farmers are gradually adopting more modern agricultural practices and becoming less dependent on middlemen. Furthermore, informant 5 indicated that newer farmers have also experienced social benefits, such as increased harmony within the community, as disputes related to irrigation water have largely disappeared. These impacts represent the direct experiences of farmers in utilizing electricity-based facilities that support and facilitate agricultural activities.

The Electrifying Agriculture program in Sangkanjoyo Village demonstrates that technology-based interventions provided by PT PLN (Persero) UID Central Java and D.I. Yogyakarta, as part of the CSR program, have generated comprehensive social impacts for the farming community. These impacts are reflected in several changes, including the

modernization of agricultural production processes, increased farmer income, improved operational cost efficiency, and the empowerment of the Rukun Karya Farmer Group, which has become more organized in managing agricultural activities. This finding is consistent with the definition of social impact proposed by Clark et al. (2004), which describes social impact as a form of change that arises as a consequence of activities or actions that have been implemented (Parikesit et al., 2024). In this context, the Electrifying Agriculture program can be understood as a development initiative that stimulates various social transformations in the lives of farmers. Furthermore, as part of a public relations effort, the Electrifying Agriculture program has succeeded in building community trust and encouraging community participation, while also generating measurable social benefits. These benefits include increased agricultural productivity, a reduction of operational costs by up to 50%, and improved household welfare among farmers.

## **Conclusion**

Based on the research findings, it can be concluded that the Electrifying Agriculture program, implemented as part of the CSR initiative by PT PLN (Persero) UID Central Java and D.I. Yogyakarta, has generated social impacts that can be understood as changes arising as a consequence of activities or actions that have been carried out (Parikesit et al., 2024). The program has produced comprehensive social impacts on the community of Sangkanjoyo Village, particularly among farmers who are members of the Rukun Karya Farmer Group. Referring to the Social Impact Taxonomy Theory proposed by Hurst & Johnston (2025) the analysis of social impact in this study is categorized into ten attributes. These include context (Social Policy and Welfare), who (Farming Community), what (Community Organization, Sense of Community, Community Cohesion, Economic, Rural and Agricultural Economic Conditions, Infrastructure and Community Empowerment), causing (the company's implementation of SDG-related policies, interventions, and business strategy), how (positive by empowering farming community), direction (positive by providing benefits and increasing agricultural productivity), temporality (given point in time and future outcomes projected for 2026), magnitude (strength and board), intention (intended and unintended), and nature (real/visible through the provision of electric rice mills, electric water pumps, new electricity connections, pest-trapping lights, rice barns, and multipurpose buildings and unobservable through experienced through changes in farmer's mindsets).

The study recommends that companies conduct regular monitoring to anticipate external factors that may affect the sustainability of the social impacts experienced by beneficiaries. In addition, beneficiaries should be continuously empowered to strengthen their capacity and resilience in addressing potential challenges that may hinder the long-term sustainability of the program. In terms of theoretical contribution, this study enriches the Social Impact Taxonomy by demonstrating that social impacts are optimized when Corporate Social Responsibility (CSR) is paired with deep community engagement, rather than treated as a mere technological rollout. However, a key limitation of this study is that it evaluated these impacts in isolation from external environmental factors, which often test the resilience of both corporate commitment and community trust. Therefore, future research should conduct comparative and longitudinal studies to map how varying regional contexts and different community engagement strategies alter the long-term sustainability and SROI (Social Return on Investment) of the Electrifying Agriculture program.

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