

## Conference Paper

# Groundwork-Based Research to Design Application SCC - Building a Sustainable Community for Children in Mountainous Area

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Children's clothing is a prime example of fast fashion, as their continuous growth requires frequent purchases. This not only impacts the environment but also puts financial strain on parents. Concurrently, many highland children lack essential material and educational resources, contributing to poverty in the region. To address these challenges, local authorities urgently require a sustainable solution that supports children, communities, and localities, fostering comprehensive development.

The project development criteria are evaluated based on the United Nations' 17 sustainable development goals (SDGs). Data was collected through an online survey of 50 married individuals, 162 non-married individuals, and interviews with those who have organized events for children in the highlands. Additionally, insights were obtained from three children from disadvantaged areas.

The results indicate that all target groups show a keen interest in social activities for children. Parents facing difficulties accessing charities, and the lack of effective collaboration between charities and local authorities, hinders sustainable development efforts.

**Keywords:** children, SDG, social sustainability, community

## 1. Introduction

SCC application is a community application which provides a solution to help people access volunteer activities for children. SCC provides a service to receive donations at home, provide co-working space between the organization and the local with the aim of creating a sustainable community with a bright future for children. The application is built and evaluated based on 17 sustainable development goals of the United Nations (SDGs). In Vietnam, achieving sustainable development goals is still difficult, especially for poor children - affect the goal of No Poverty (Goal 1). Because of the difficult terrain and lack of existing infrastructure, children have few opportunities to access facilities that

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are comprehensive education – affect the goal of Quality Education (Goal 4). This leads to many consequences that affects not only their future but also society. In big cities, the amount of children’s clothing waste is huge and can become a source of supply for children in mountainous areas – handling fashion waste can be a way to deal with Goal 11&12 – Responsible Consumption and Production. To be able to do this requires the joint efforts of both charities and local authorities – Partnership to achieve the goal (Goal 17). This study was carried out, therefore; to understand the current situation as well as to offer a plan to connect the community and poor children along with local authorities.

## 2. Define the problem

Children’s clothing themselves are the embodiment of fast fashion as children’s bodies from birth to elementary school are continuously developing, requiring a large amount of clothing to adapt. In fact, children’s clothes are often less yellowed (in comparison to adults’) and still worth using, but in the end the fate of those items still ends up in landfills or at most 2 uses. [1] This generates a significant impact on the environment. Not just clothes; the same ending happens for children’s toys, storybooks and textbooks. [2]

It can be seen that children’s products are a potential market for manufacturers. With the speed of consumption and users’ demands, new products and continuous production is always welcomed. This also creates financial stress for parents (Ravenhall, L, 2022)<sup>(3)</sup>. Fashion waste is difficulty for parents to find a solution to handle them in a sustainable and effective way. Meanwhile, in the highlands, where there are many children with poor circumstances that are really lacking with both physically and mentally. Children here can only rely on supports from the community. When their material conditions are not met, they cannot access higher levels of needs such as safety and social needs, etc. (Cherry, 2022) [4].

On the community side, there were many groups and charities putting their efforts on helping poor children by organizing food, clothing, etc. But it is clear that this approach only brings immediate results, which is providing only material needs for them. So how do they get out of poverty? The answer is only by themselves – they have to learn and work to be self-sufficient and have a better life. In order for the poor and the local government not to be in a “passive” position, they need to learn an effective working model, which requires the local community to participate in monitoring and learning. Only then will children be able to escape poverty sustainably.

With the aim of creating a community of sustainable development with mutual support, the project team has carried out research to come up with a suitable solution on how to connect the above target groups and most importantly, to make sustainable development possible.

### 3. Methodology

#### 3.1. Desk research

Desk research includes research on SDG, research on the current situation: how fashion waste affects the environment, research on multi-dimensional poverty and research on the needs of localities to come up with appropriate solutions. In addition, our team also learn about Vietnamese charity law to ensure and strengthen the operation. Finally, our team carried out research on competitors to learn as well as to solve the disadvantages that hinder application users.

#### 3.2. User research

User research focused on understanding user behaviors - how parents handle their children's items, their needs, and motivations through interviews with four target groups: parents, local authorities, charities, and poor children.

Research methods included: Surveys, usability evaluations and other forms of feedback methodologies.

### 4. Data collection

#### 4.1. Desk research

##### 4.1.1. About SDG

SDGs are also known as Sustainable Development Goals. The SDGs, constitute the core of the 2030 Agenda for Sustainable Development, was discussed and approved by all 193 member countries of the United Nations in 2015. With a broad vision, long-term goals and plans of building a sustainable society, 17 ambitious goals had been setting out, ranging from poverty alleviation to education, to zero discrimination and inequality, to access to basic services or to more serious matters like fighting against climate change... If we achieve the sustainable development goals among people, governments

and businesses, we can make the world a more prosperous place for all, where no one is left behind. [5]

The application is developed and evaluated based on 5/17 goals of SDGs. With each goal, we conduct research and assess the influence of that goal on the remaining 16 goals on the list, which helps to choose the appropriate goal to help disadvantaged children and develop sustainment in the future, particularly as follows:



**GOAL 1 - NO POVERTY: END POVERTY IN ALL ITS FORMS EVERYWHERE**

In Vietnam, children in highland areas have difficulties accessing facilities, which significantly affects their development. SCC will provide activities to donate clothes, food, repair facilities to overcome this situation.



**GOAL 4 - ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL**

Highland children do not have access to advanced education, leaving them with no opportunity to learn and discover themselves. SCC will provide useful educational activities and soft skills classes for all-round development.



**GOAL 11 - MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE.**

SCC is a tool for parents to contact to register to donate children's clothes, books, and toys. SCC is also a tool for the community to register to participate in volunteer activities.



**GOAL 12 - ENSURE SUSTAINABLE PRODUCTION AND CONSUMPTION PATTERNS**

Helping the community have a tool to handle children's fashion waste is SCC's goal, from which parents can build a sustainable lifestyle and consumption; as well as helping children's fashion businesses to have a more multi-dimensional view of the production of children's products.



**GOAL 16 - PEACE, JUSTICE AND STRONG INSTITUTIONS**

To be able to escape poverty sustainably, it is necessary to involve local authorities instead of just receiving donations as before. The organizations, the community and the local government must participate in the process of working with the organization's monitoring through a common workspace on the SCC application.

**4.1.2. State of affairs**

**4.2. Clothes waste**

Children's fashion is often overlooked when it comes to sustainable fashion. Although the market share of this industry is small, it contributes a significant part of the nearly 30 billion pounds of textiles that end up in landfills each year.

According to Eeva's 2019 [1] research, 64% of babies' clothes are still in good condition and can still be used by others.

Nearly 40 million pairs of children's shoes [6] are produced every year but they are thrown in the landfill even before the expiration date because the size of children's

feet increase 1.5 times every 3 months. For the same reason, financial problems for parents are made. (Ravenhall, L. (2022)). They constantly have to buy new clothes for their children and do not know how to promptly and appropriately handle their children's old items. That pile of old clothes eventually ends up in landfills, contributing to environmental damage.

### 4.3. Impact on environment

A t-shirt requires nearly 660 gallons of water to produce, which is enough water for humans to drink for 3 years. Additionally, it also produces greenhouse gases equivalent to a car traveling nearly 18 km [1]. Despite seeing the immediate harm, many companies still continue to use their materials and not consider changing into environmentally friendly production methods.

Human consciousness is the biggest impact on the environment. 1 in 2 people will throw away their clothes without considering giving it to others in need. As a result, more than 60% of the total clothing produced ends up in landfills. [7]

### 4.4. Conclusion

With the rapid consumption of children's products, their waste affects the environment and affects the economy of parents. Meanwhile, products such as children's clothing still have the ability to extend their lifespan. Therefore, the recycling and reuse of clothing products is extremely necessary.

This is unsustainable consumption, the confusion of parents in how to handle clothing waste is in stark contrast to the situation of material deprivation in children in the upland provinces. This affects Goal 12 – Responsible Consumption and Production.

#### 4.4.1. Poverty in Vietnam

UNICEF experts have analyzed the poverty situation in Vietnam using multi-dimensional analysis. Currently, about 5.5 million children are deprived in at least two of these areas: education, health, nutrition, shelter, water and sanitation, or social inclusion. By age, children aged 0-2 have the highest rate of multidimensional poverty, and children aged 6-10 have the lowest. By region, in the highlands of the North and the Central Highlands, the multidimensional ratio ranks the highest. Lower regions such as the Red River Delta

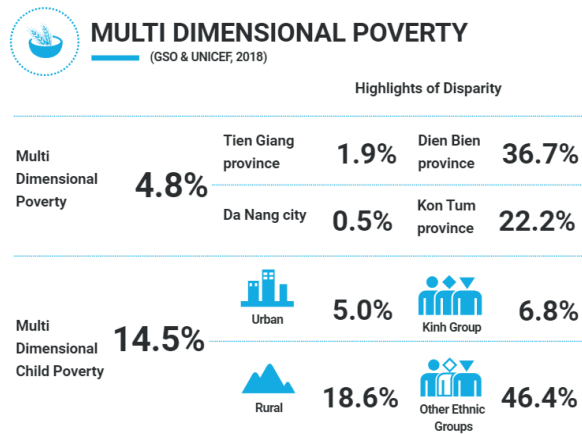


Figure 1: Multidimensional Poverty [8].

and the Mekong River Delta have low rates of multidimensional poverty Unicef (2022) [8]

Vietnam has 54 ethnic groups in which the Kinh accounts for nearly 87% of the total population with a very low rate of poverty. Ethnic minorities make up just over 13% of the total population, but almost half of them live in poverty. In the highlands, where the economic conditions are deficient and the society is difficult, 8 out of 10 ethnic minority children are multidimensionally poor and have to live in poverty and lack basic needs.

#### 4.5. Effects of poverty on children

Ms. Rana Flowers, Chief Representative of UNICEF in Vietnam, said: “Poverty is a violation of children’s rights. If children grow up in poverty, they are more likely to become poor as adults. Children who grow up in poverty, lacking essential goods and services, suffer lifelong consequences such as poor health, poor nutrition, missed or no education, problems with mental health, insecurity, low self-esteem, stigma, violence, less opportunities to get a job to ensure a stable income. Therefore, child poverty has a negative impact on the development of the country’s human capital, which in turn leads to economic growth.” [9]

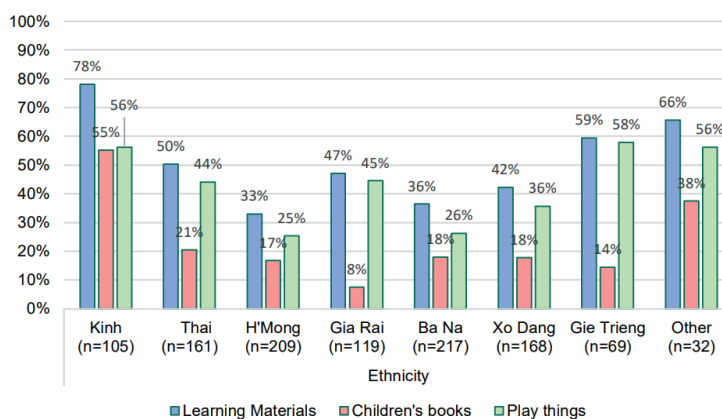
According to Ms. Rana Flowers: “United Nations Sustainable Development Goal No. 1 has identified children as a specific group that needs to be measured for poverty because children are particularly at risk of falling into poverty. Social security policies in Vietnam have a limited audience. Only about 10% of children receive subsidies - most of which are educational subsidies for children of ethnic minorities and certain specific groups of children as required by law. Less than 1% of children under 36 months of age

receive benefits and these benefits are of low value. Currently, Vietnam allocates 0.04% of GDP to a regular social allowance for children. This level is much lower than other middle-income countries in ASEAN. Above all, sustainable poverty reduction starts with children. We have an obligation to protect children’s rights and invest effectively in the future of our country. Priority is given to all children aged 0-3 as this is a pivotal stage in child development and gradually expanding coverage to include older children.” [9]

### 4.5.1. Local needs

According to UNICEF research, the rural and mountainous areas have the largest number of children living in multidimensional poverty; in which the H’Mong people often live in remote villages and earn their income from growing maize and rice on terraced fields. Currently, the H’Mong ethnic group accounts for about 1 million people out of the total population of Vietnam. The rate of malnourished H’Mong children is up to 75% in some places, 40% in Lao Cai, nearly double the national average. 9-year-old children have the same physique as 4-year-old children and adults here are similarly stunted. (Unicef (2021)) [10]

**Figure 13. Percentage of households having children aged 0-8 years in the project locations who have learning materials at home, by ethnicity**



**Figure 2:** Percentage of households having children aged 0-8 years in the project locations who have learning materials at home, by ethnicity [9].

Numbers of communes in Region III (communes with special difficulties) belongs to ethnic minorities and mountainous areas are communes that have not been recognized as meeting new rural standards and have one of the following two criteria: Having a poverty rate of 20% or more; having a poverty rate of 15% to less than 20% and adding 1 of the following criteria: More than 60% of poor households are ethnic minorities). [11]

Dien Bien: 94 communes.

Ha Giang 133 communes.

Kon Tum 52 communes.

## 5. Conclusion

From the above information, some conclusions can be drawn as well as activities for children such as providing clothes, books and necessary items for children. In addition, it is also necessary to organize activities to help children in all aspects such as: building schools to help them have a place to study, building bridges to help them commute more easily, building a community library to help children develop reading skills along with acquiring more knowledge, movie screenings, cultural performances to mentally helping them, increase curiosity, imagination, even holiday activities like making Chung cake, etc.

### 5.1. Survey

To clarify the problem mentioned above, our team conducted a survey with 2 groups of subjects: The group of parents with young children and the group of young people aged 18-24. The questionnaire tool that we use is Google. The survey is divided into 3 parts. Part 1 is about personal information, part 2 is for parents to answer about shopping habits and the use of children's products and part 3 is the interest of both groups for children's community activities.

Through the survey, we can assess the demands and habits of parents for children's products such as clothes, toys, books, etc. and how they use them, treat them when these items are no longer in need. Therefore we can capture their psychology to come up with solutions to limit emissions to the environment. In addition, with questions about the community's interest in community activities for children, we can evaluate their response by creating a connection between the community and the poor children.

### 5.2. Interviewing user opinions and expert opinions



### 5.2.1. Interview with parents

To better understand users' habits and concerns when participating in community activities for children, we conducted interviews with 5 parents, ages ranging from 33 to 40 and have young children between the ages of kindergarten and middle school.

### 5.2.2. Interview with organization representatives

The second object is the community organization side. We conducted interviews with 3 representatives of 3 charities and community organizations in Hanoi to better understand the requirements of groups in need of support in different regions based on these organizations' experiences as well as learning how a community organization works.

### 5.2.3. Interview with disadvantaged children

We ask the children about their living situation, material needs, educational needs and dreams for the future so that we can better understand their needs and psychology.

## 6. Findings

### 6.1. Interview findings

Interview with parents Finding proper organizations to donate children's items is in great demand; they need places that have material support projects for children so that they can send items to children with difficult circumstances.

By donating, they want their own children to learn about prudent and the virtue of sharing with the community.

They lack time to filter and categorize products and time to travel to pick up locations if they are far away.

#### 6.1.1. Interview with organization representatives

In mountainous and highland areas where many ethnic minorities are concentrated, necessities such as clothes, books,... are needed. Consequently, when necessary items are provided enough, there will be programs and social activities such as building

schools, renovating residences, building libraries, cooking Chung cake, watching movies, acting plays... to suit the interests of young children.

As for places like kindergartens, children's villages, social centers, etc., instead of material things, charitable activities, social activities, exchange programs and cultural activities for children are required more to develop more soft skills, some activities such as opening workshops, organizing entertainment games, etc.

### 6.1.2. Interview with disadvantaged children

Requirements:

The accommodation needs to be renovated.

Improve health status by eating nutritious food.

Provide clothes to wear, especially in the cold winter.

Participate in soft skills classes, sex education.

Equip knowledge about self-defense.

Organize science and art practice sessions.

Fun and safe activities for kids.

## 7. Conclusion

Through interviews with 3 target groups, we have a better understanding of the needs of parents. Not only do they want to give back clothes to avoid waste, but also want their children to learn the virtue of thinking about those less privileged around them. Similar to charities, through donations they also want to build a sustainable lifestyle for the community as well as for poor children to receive more help. The needs of poor children are also clarified as they want to enjoy guaranteed facilities so they can play and study with peace of mind.

### 7.1. Survey findings

Clothing takes up the most invested products for children with 36%, books with 34% and toys with 30%

For children's products, 78% of parents often choose to buy new and the rest is being given from relatives or friends

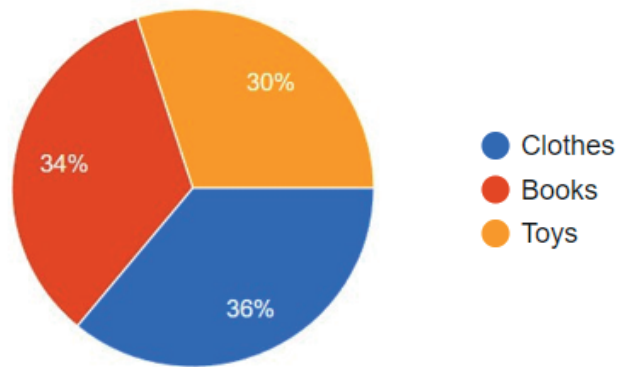


Figure 3: Invested product.

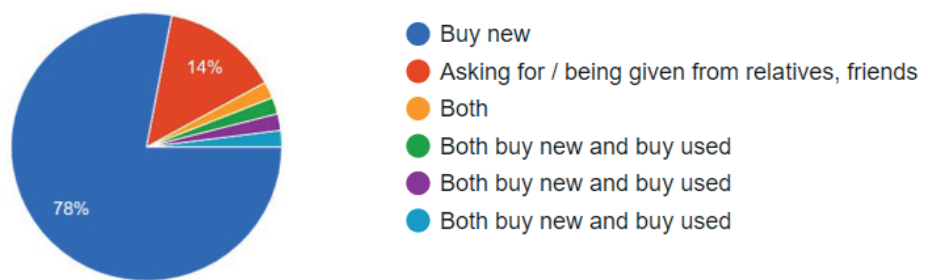


Figure 4: Shopping habit.

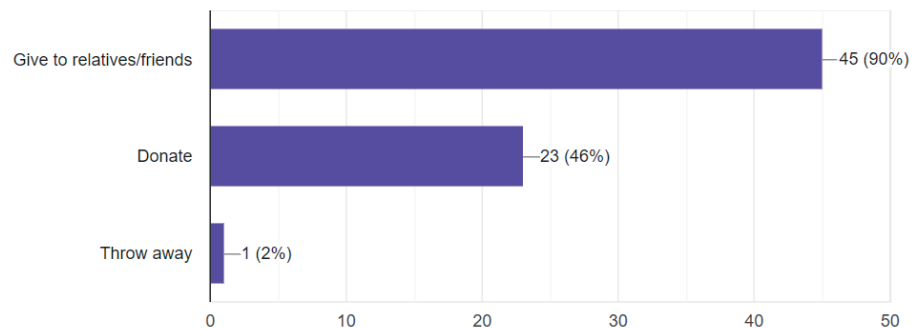


Figure 5: Handling of old product.

For products that children no longer use, parents often choose to Give to relatives and friends (90%), and the percentage of them throwing away their children’s old stuff is 2%.

The most concerning matter when participating in social activities is Organizational Reliability with 65.1% of vote from users, meanwhile they do not find it much difficult in effectiveness and long-term purpose or registration form (both 0.5%).

158 people voted for “Interested” in community activities and 18 people vote for “Less interested”

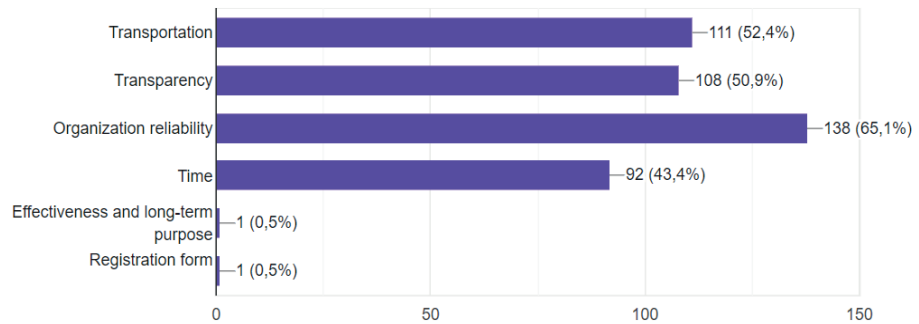


Figure 6: Difficulties of participating.

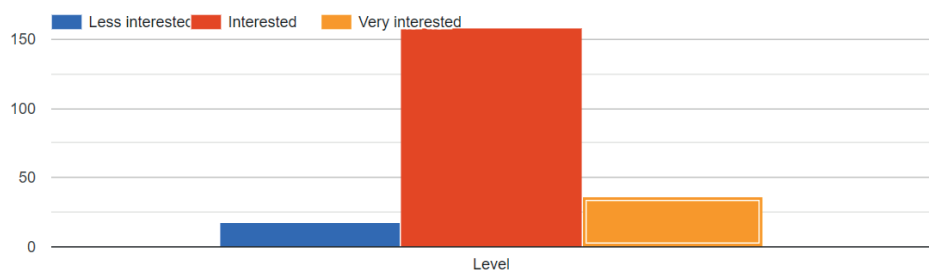


Figure 7: Number of people interested in community activities.

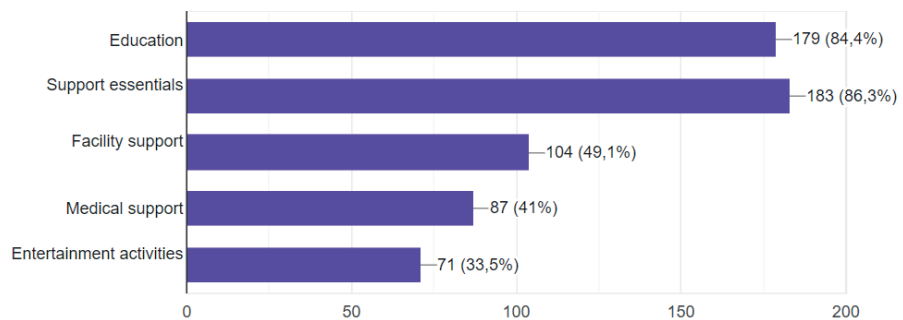


Figure 8: Topic that people interested in.

People are most interested in Supporting necessities with 86.3%, and they are less interested in Entertainment activities (33.5%)

Through the survey, it can be seen that the children’s products that parents invest the most are clothes (36%) and books (34%) and they often buy new ones. This shows that children’s items can still be used due to their new conditions. Parents also often look to social activities, showing that everyone has a sense of community and is very interested in poor children. They are most interested in education (84.4%) and facilities (86.3%). However, they have difficulty joining because of the transparency (65.1%) and mobility (52.4%). The SCC application will provide a comprehensive solution.

## 8. Conclusion

The above study shows that multidimensional poverty among Vietnamese children needs a comprehensive solution. But there must be a method available to connect the 3 groups of **Community - Organization - Local government**.

TABLE 1

Primary requirement	Secondary requirement
Parents need to find a place to donate their children's clothes, toys, ... that are no longer used	Quick and easy contact services Pick up Tracking parcel status
Users who want to find diverse community activities	Access to many project topics Prestigious and authentic information Transfer money quickly Receive project updates
Organizations that want the locals to participate in the process of working for sustainable development	Tracking task status Manage member Fast application processing

To achieve the SDG goal, we need a lot of effort from both the community and each individual. The SCC application is built as a bridge between stakeholders. We solve this problem with 3 solutions:

1. Users register to donate children's clothes through the "Donate" function. From the application form, the app will suggest necessary and suitable projects. Delivering essential necessities to poor children helps us to achieve Goal 1 – No Poverty.

2. SCC provides community activities classified by topic: Education, Health, Facilities, Necessities and Entertainment so that users can refer and choose to participate in helping the children between five topics above. Segmenting 5 topics so that the community can participate is a two-way solution to help children's lives be supported in the most comprehensive way and also, creates a space for the community to join hands. That is SDG Goal 4, Goal 11 and 12 we need to solve.

3. User Accounts Organizations and Local Governments will have a common workspace – which helps people to keep track of work items by project, assign work, and save contact information. All working processes must ensure that the project process takes place seriously and transparently for sustainable development together, ensuring SDG Goal 17.

To jointly achieve the SDG Sustainable Development Goals, we need a lot of effort. Vietnam is working hard to get there before the 2030 deadline. Since poverty must be tackled starting with children, the belief is that one generation can change the course of

an entire country. With the SCC app, we hope that all children can live and be supported by a sustainable society and community.

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