



GREENING SCHOOLS For Climate Resilient Communities



GREENING SCHOOLS FOR CLIMATE RESILIENT COMMUNITIES

Since 1989, the Regional Schools and Colleges Permaculture (ReSCOPE) Programme has worked with schools to create resilient local communities; work that the Global Ecovillage Network later adopted as a key strategy to facilitate the transition of existing communities to become ecovillages, through the Greening Schools Programme.

This manual highlights learnings from the ReSCOPE and GEN Greening Schools Programme, supporting and engaging children, youth, and their communities in project-based and collaborative learning as well as participatory and design-based community development. Sharing insights from work with 220 schools in 5 African countries, it distills our approach to using schools as focal points for increasing resilience, building capacity for climate change adaptation, creating regenerative economic opportunities for less privileged groups, and strengthening local economies through practices grounded in **the** local culture, society and ecosystems.

So far, ReSCOPE and the Greening Schools Programme have been active in South and East Africa, working with 100 schools in Zimbabwe, 40 in Malawi, 40 in Zambia, 20 in Kenya, and 20 in Uganda. We are now scaling and developing the approach, engaging community schools all over the world in taking the next steps towards education for sustainable development together.

We hope and believe that our work and this manual can be of use and inspiration in diverse learning environments and community-based initiatives, as well as for those interested in holistic, participatory, just, and regenerative community development.

WHY GREENING SCHOOLS?

- To reconnect children, young people, and school communities to their own cultures, ecosystems, and history
- To support communities to design and implement their own pathways to sustainable development
- To transform schools into demonstration centres and living examples of local resilience and abundance
- To utilise the full potential of schools as intergenerational centres of learning and collaboration
- To counter cultural erosion caused by colonialism and globalisation
- To provide an alternative to unsustainable models of land use and global development
- To spread holistic, collaborative, project-based and transformative education for sustainable development
- To provide real **life skills** instead of educating children in African countries primarily for white collar jobs that are not available
- To equip the next generation as well as their parents with hands-on skills for locally appropriate regeneration, climate change adaptation, and social entrepreneurship
- To strengthen local resilience and food security in regions where hunger or undernourishment is rampant, with over 40 percent of children in eastern and southern African countries being stunted due to lack of food.



TOWARDS A JUST AND RESILIENT FUTURE

The world is facing serious and interconnected challenges including the threat of runaway climate change, the unraveling of ecosystems, pervasive discrimination, hunger, poverty and war, cultural erosion, mass migration, rampant inequality, global pandemics, and the multiple effects of a fossil-fuel-based economy of unlimited growth on a finite planet, to name a few. All of these suggest that the way of life in industrial and post-industrial societies is unsustainable, and point to the urgency of creating and implementing other ways of living.

In addition, the effects of climate change are felt most acutely by those who are least responsible for causing the problem. Communities in the global South - as well as low-income communities in the industrialised North - are bearing the burden of rich countries' overconsumption of our planet's resources.

These problems are global and point towards our worldwide interdependence. In addition to global policy responses such as the United Nations Sustainable Development Goals (the SDGs), and the Paris Climate Change Agreement, local communities, organisations, and grassroots activists around the world are working tirelessly to transform communities and create a future in which we can all thrive.

GEN and ReSCOPE firmly believe that effective climate solutions honour both human rights and the rights of nature, and that empowered, local, and democratic communities stewarding their

own energy, land, and water, are the best answers to combating the exploitation of both humans and ecosystems.

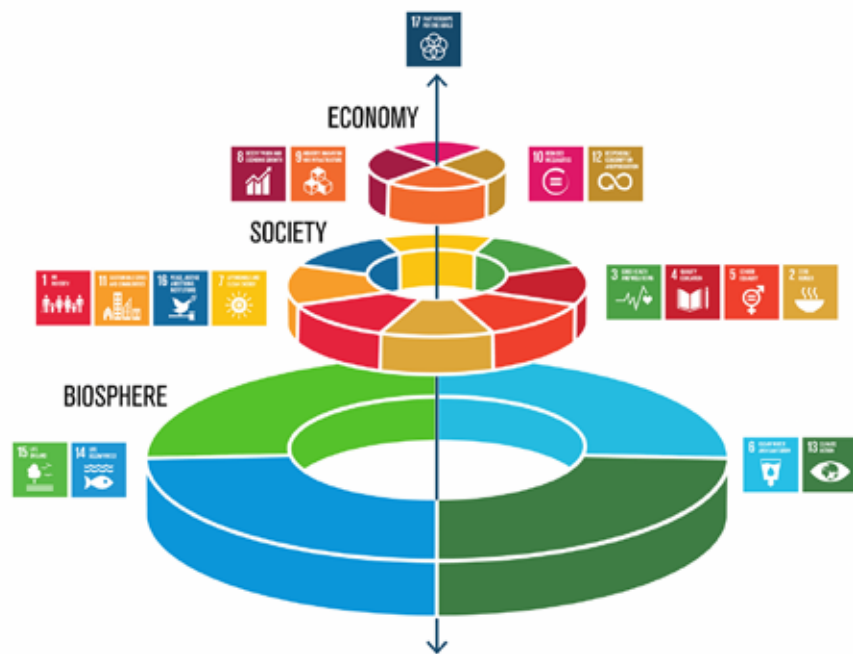
There has never been a better time to explore a paradigm shift in lifestyles as well as education. The COVID 19 pandemic has presented new challenges, disruptions, and opportunities for change. Online education is receiving unprecedented attention. And the climate emergency is increasingly forcing people to think differently about their lives, livelihoods, and futures.

The rapidly changing conditions also demand a new approach to education, one that involves whole communities in locally sensitive sustainable development, and supports children and youth to navigate uncertainty, take action, and become climate leaders.

AN ECONOMY IN SERVICE OF HUMANITY AND THE BIOSPHERE

In 2016, Johan Rockström and Pavan Sukhdev from the Stockholm Resilience Center, created a way of looking at the United Nations Sustainable Development Goals where economies and societies are seen as embedded parts of the biosphere. As they argue, this model changes our paradigm for development, moving away from an approach where social, economic, and ecological development are seen as separate parts, and towards a logic where the economy serves society so that it evolves within the safe operating space of the planet.





Azote Images for Stockholm Resilience Centre. From Rockström and Sukhdev keynote speech at the Stockholm EAT Food Forum in 2016.

As this manual highlights, Ecovillages embrace this holistic approach, and have actively experimented for decades with community-led, participatory, and deeply democratic ways of living well together within the means of the planet.

Highly relevant to the Greening Schools Programme in Sub-Saharan Africa with its focus on food security and land-based social entrepreneurship for marginalised groups, Rockström and Sukhdev concluded that all the sustainable development goals are directly or indirectly connected to sustainable and healthy food. They also put forward that goals on eradicating poverty (SDG 1) and zero hunger (SDG 2), require gender equality (SDG 5), decent jobs (SDG 8), and reduced inequality (SDG 10).

ECOVILLAGES AS A PATHWAY TO SUSTAINABLE DEVELOPMENT

Ecovillages embrace holistic and participatory models of regenerative living and development, based on social, cultural, economic, and ecological regeneration and whole systems design.

An ecovillage is an intentional, traditional, rural or urban community that is consciously designed through locally owned participatory processes. Because each ecovillage is designed by the people who live there, according to their vision, context, culture, and interests, no two are alike. In the Global Ecovillage Network, we have learned that while there is no one way of being an ecovillage, there are three core practices shared by all:

- Being rooted in local participatory processes
- Integrating social, cultural, economic, and ecological practices into
- a whole systems approach to regeneration
- Actively restoring and regenerating their social and natural environments

Ecological and carbon footprint studies show that some of the lowest footprints in the industrial world can be found in ecovillages. In 2017, GEN investigated the impact of ecovillages from around the world to find out how they are contributing to reaching the SDGs and Paris Climate Agreements. Some of what we found out is that:



GOAL 4: QUALITY EDUCATION

100% provide education and lifelong learning opportunities in the fields of sustainable development, regenerative lifestyles and climate change adaptation.



GOAL 5: GENDER EQUALITY

90% have more than 40% women in decision-making bodies.



GOAL 6: CLEAN WATER AND SANITATION

97% actively work to restore or replenish water sources and cycles.



GOAL 11: SUSTAINABLE CITIES AND COMMUNITIES

100% actively safeguard regenerative cultural traditions using local sustainable ways of building, farming and preparing food.



GOAL 13: CLIMATE ACTION

90% work actively to sequester carbon in soil and biomass.



GOAL 15: LIFE ON LAND

97% of showcase ecovillages work actively to restore damaged or degraded ecosystems.



GOAL 16: PEACE, JUSTICE AND STRONG INSTITUTIONS

100% provide education in decision-making and mutual empowerment skills, and 96% provide training in nonviolent conflict resolution.

THE ECOVILLAGE MAP OF REGENERATION

Using what GEN calls the Map of Regeneration and the 32 Ecovillage Principles - 6 principles each for the cultural, ecological, social, and economic areas of regeneration and 8 for Integral Design - any individual, group, project, organisation, school or community can embark on their unique journey towards more regenerative and community-based living.

This map is an integral part of the Greening Schools approach, where it provides a guide for communities to assess their own assets and needs, think systemically and holistically, and co-create a shared vision and ecovillage development plan in which the school and school grounds play a central role.



THE GREENING SCHOOLS APPROACH TO ECOVILLAGE DEVELOPMENT AND LOCAL ECONOMIC REGENERATION



ECOLOGY -

Aims to meet human needs for food, water, shelter, and energy without damaging the capacity of others to do the same, supporting us to become a force for good in the ecosystems we are part of, contributing to ecological diversity and health as well as our own wellbeing.



SOCIAL -

Aims to cocreate just, caring, equal and diverse communities where people skillfully communicate, practice participatory governance and leadership, build trust, and achieve shared goals together.



ECONOMY -

Aims to design and support economic systems that actively contribute to ecosystem health and community strength and wellbeing, creating vibrant local economies with meaningful livelihoods that turn making a living into a way of meeting the needs of all within the means of the planet.



CULTURE -

Aims to weave rich and life-sustaining cultures that honour indigenous wisdom and welcome positive innovation, and art, celebration, higher purpose and growing self-awareness create a fertile field for all of us to find our way back to a natural sense of self-worth and connectedness.



INTEGRAL DESIGN -

Shows a way to think, act, design lead from a whole systems perspective.

WHY WORK WITH SCHOOLS?

The Greening Schools Programme brings communities together to build capacity for climate change adaptation, supporting communities to transform into ecovillages, seeding new social enterprises, and providing new opportunities for children and youth as well as adults. At the centre of our strategy is the community school - serving as a meeting point and demonstration site for the kind of future the community wants to create. We found working with schools to be a key leverage in community development, because:

- Schools are generally an underutilised resource in community development
- Schools are natural centres in the community: community members visit their local schools for a variety of reasons
- Community members tend to respect schools
- Schools are unique interfaces between generations
- Schools are agents of socialisation and present massive opportunities for shaping the future
- Children are much better and more adaptive learners than adults

Schools are naturally at the heart of many communities, and a place through which a community can be engaged, united, and potentially transformed. Schools are, of course, places of learning and socialisation, where young people spend a majority of their time, and can in addition to that act as hubs for creating links between adult community members, host regular extracurricular activities for all ages, provide venues for community events, and more. When operating at their full potential, schools enable communication,

learning, and potentially new practices and paradigms to flow into the community, through the children and youth as well as the adult community members engaged with school activities.

Schools are an invaluable resource in community development, and working with schools presents massive opportunities for shaping the future. As this manual and our work with schools aims to show, schools can be pivotal in creating community cohesion and resilience, building intergenerational links, promoting lifelong learning, and helping to bring about ecological and socio-economic transformation.

LIFE-SKILLS, LOCALISATION AND EDUCATION FOR SUSTAINABLE DEVELOPMENT

“ESD [Education for Sustainable Development] empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability, and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning and is an integral part of quality education. ESD is holistic and transformational education that addresses learning content and outcomes, pedagogy, and the learning environment. It achieves its purpose by transforming society.” - UNESCO

The pedagogical, social, and physical contexts of the learning environment are important not only in terms of what children and young people learn, but also in framing their understanding of their role in their community and the wider **world - what they do with their knowledge**. The way children are encouraged to enquire, to collaborate with each other, and to apply their knowledge to real-world situations, impact how they will interact with the realities ahead of them.

Instead of preparing students to go into industries that lead to mass consumption and high carbon footprints, the Greening Schools approach facilitates connection with local history, culture, and nature. Children find meaning in their learning and purpose and belonging in their community.

The Greening Schools approach is based on:

- Learning by cocreating, using project-based and collaborative pedagogies where learners build real life-skills and experience themselves as valued contributors to their communities.
- Education for Sustainable Development, where learning involves personal, social, and ecosystem regeneration and achieves its purpose by transforming local communities
- Genuine integration and participation of young people in community development
- Identification and creative use of local and indigenous resources and knowledge, rooted in local culture and celebrating intergenerational learning
- Making learning fun, practical and relevant for everyone, with an integrated approach across the curriculum and promoting the inclusive and active participation of whole communities
- Engaging multiple stakeholders in realising a common vision, using a blend of learning processes in order to bring about real, meaningful, and responsible change.



FROM ECO SCHOOLS TO ECOVILLAGES

The Greening Schools Programme is based on The Ecovillage Map of Regeneration and the ReSCOPE Integrated Land Use Approach; a whole-school participatory design process for community development.

The process consists of five key steps:

1. **GROUNDING** – supporting the children, youth and school community to become more aware of and feel connected to their particular ecosystem, culture and history; exploring and creating a stronger sense of place together.
2. **SITUATIONAL ANALYSIS** – using the Ecovillage Map to identify locally available resources and developing a common understanding of these; mapping and analysing current community assets and needs together with the children, youth and community.
3. **VISIONING** – Thinking into the future and developing shared long-term goals for the school community; creating an ecovillage-based vision for the future ecological, social, economic, and cultural life of the whole community.
4. **INTEGRAL DESIGN** – using participatory whole systems design to create a new role for the school and its grounds, turning the school into a multi-functional ecovillage demonstration site that contributes actively to the community vision while also meeting the needs of children, youth and their communities.
5. **IMPLEMENTATION AND MONITORING** – developing a clear and participatory plan for implementation and evaluation; finding accessible and inclusive ways to evaluate, learn and improve together as the new school design becomes reality.



KEY PRINCIPLES OF THE GREENING SCHOOLS APPROACH INCLUDE:

- **Experiential and collaborative learning** – creating opportunities for inner and outer transformation through hands-on projects and active collaboration.
- **Deep Ecology** - Promoting deep and thoughtful care for the environment and everything in it, based on an understanding of the interconnections between all things
- **A Whole School approach** - bringing together learners, teachers, parents, and others to co-create a rich learning environment inside and around the school.
- **Inclusiveness and genuine participation** - inviting all to participate during the entire process. Learners, teachers, parents, and community members vision, plan, implement, and monitor together, owning the process from start to finish.
- **Responding to Real Needs** - promoting a needs-based approach that creatively weaves together the building of resilience within the ecosystem while moving communities towards key needs such as food sovereignty, nutrition, and income security.
- **Sustainability** – the new school should be ecologically sustainable, socially just, and economically viable while building community resilience.
- **Uniqueness** – There is no one way. Each school comes up with its own unique design that best meets its own needs
- **Start Small** - ensure quality and grow organically

GREENING SCHOOLS AND THE ECOVILLAGE MAP OF REGENERATION

The 32 Ecovillage Principles in the areas of cultural, ecological, social and economic regeneration and integral design play a central role in the process of co-designing each Greening Schools project, as explained above. They are also at the core of the process through which the school and community are transformed during implementation.

Throughout the process, nurturing a shared sense of place, local **culture**, and awareness of how the particular social, historical, and geographical context shape life play a central role. A cocreated, inclusive, and celebratory sense of local identity and belonging becomes a strength that underpins the entire project. To ongoingly cultivate this shared sense of place, history and future, cultural ecovillage practices such as making explicit shared and individual senses of vision and purpose, honouring local traditions while innovating, revitalising local arts, celebrating life-cycles, developing an active sense of being connected to local and global ecosystems, and growing self-awareness, all become important in shaping a world-view that grounds and supports the unfolding of each unique project.

When it comes to implementation, in most places, working with **ecology** is the easiest and most accessible starting point. Food, water, housing, waste, energy and our environment are tangible resources present in the everyday lives of children and youth, and of primary importance to any community. In today's world, many communities also face ecological crises, such as droughts, flooding, or desertification, and in some parts of the world, including the locations in which GEN and ReSCOPE work, hunger is a daily threat to the wellbeing of school children and their families.

As a starting point for learning, the school curriculum also has many topics that touch on ecology, such as chemistry, physics, biology and

geography. From a pedagogical perspective, activities like creating a school garden, food forest, wildlife pond, or rainwater harvesting system, installing a solar panel, or building a composting toilet also give children and youth rich opportunities to learn by doing, addressing real issues, and engaging in hands-on transformation of their immediate environments.

This type of learning is by its nature collaborative, requiring learners to solve problems and implement solutions together. Since parents and other community members are also engaged throughout the Greening Schools process, the need to work well together extends to the whole community. Thus, learning and practicing **social** skills such as good communication, collaborative governance and decision making, participatory leadership, building trust, integrating diversity, and resolving conflicts all become necessary for the success of the project.

As the school starts functioning as a demonstration site and children as well as community members learn how to create and implement ecological projects together, opportunities for **economic** activities and learning tend to arise. These will vary depending on location, but a school garden could for example lend itself to learning about selling surplus food at the market, and an upcycling project might lead to opportunities to market and sell the goods produced. Since each project is designed with the real needs of the community in mind, the opportunities are also likely to address those needs, and be grounded in the shared vision for the future of the community.

Whether based on growing high-value agricultural products, natural building, appropriate technology, or something else, activities at the school thus have a potential to create opportunities for small social enterprises and new economic activities for youth as well as older community members, based on a solid cultural, ecological and social foundation, and rooted in a cocreated vision and plan for the whole community.

In this way, the process of transitioning towards resilient ecovillage living, echoes the insights of the Stockholm Resilience Centre and their presentation of the Sustainable Development Goals, discussed above, where the economy sits within and serves human society, which in turn is embedded in our local ecosystems and global biosphere. Whatever the specific local vision for regenerative living entails, it simply cannot exist without a healthy ecosystem. Starting with **Ecology** and basing our activities on how they interface with and affect the cycles of life on this planet will always be the key to creating or rediscovering a more generative human way of life.

For ecovillages, culture too plays a vital role, in shaping our world-views and practices, anchoring human activities in regenerative paradigms of who we are and what our role in our communities and ecologies are and could be.





GREENING SCHOOLS IN PRACTICE - EXPERIENCES FROM RESCOPE & GEN

Throughout the work of ReSCOPE and GEN in Malawi, Zambia, Zimbabwe, Uganda and Kenya, these are some of the ways in which ecological and economic aspects of ecovillage development have presented themselves in practice. Ecology and Economy are consistently the two areas that show up as most underdeveloped or threatened in the African communities we have worked with. In many cases, social systems for collaboration and community building as well as living local culture and knowledge are both relatively intact and well functioning. In other places, Europe among them, the work very often starts with reknitting community and training people in working together for common gain, rather than as isolated individuals or consumers.

ECOLOGY

In many of the communities we have worked with, the primary need identified by the community and school is access to food. Many of our projects thus begin with a focus on food security and zero hunger, and on using school grounds to grow food for school lunches. From there, the focus can grow to nutrition and diversifying food, learning about traditional foods and locally adapted crops, and on to seed saving and the importance of local seed banks for resilience and autonomy.

With a new focus on agroecology, local practices and diversification, lost traditional crops such as millet, sorghum, cassava, bambara nuts

and cowpeas are brought back to life, and farmers adopt sustainable farming **tools**, such as intercropping and other agroecological practices. Farmers gain resources to diversify their produce to incorporate drought resistant crops, and experience simple ways of saving and stewarding water.

As learning starts to spread and more people engage, the school project starts to become central in improving seed security and crop diversification, and becomes a pathway to increasing community resilience in the face of climate change, hunger, malnutrition and poverty.

ECONOMY

A key to economic development is the capacity to add value to produce. Oil machines, solar dryers and other simple technology is therefore placed at the schools, where they are available for teaching as well as use by the whole community. Children and young people at school can be engaged in the whole cycle of production, from growing high value crops like lemongrass, via using the equipment to extract oils, to packaging and **marketing** the finished product. Similarly, food crops can be taken to market or used to create jams, dried fruit or chutneys, and waste can be upcycled to useful or decorative items.

We have seen mutual support and learning groups of community members form, focusing on for example natural building, soap-making and natural cosmetics, marketing, value addition, and arts and crafts. Through the groups, cooperative social enterprises

form, engaging in **things** such as water management, construction, selling fuel-efficient rocket stoves, essential oils, jams, soaps, teas and nutritional powders, and supporting others through training and marketing. Often, members of these groups and enterprises are from marginalised groups, including unemployed young people, single mothers, and elderly community members.

By creating mutual support and learning groups and social enterprises, communities address education for sustainable development and poverty reduction. And by actively engaging vulnerable or marginalised individuals in these educational and economic activities, they work towards empowerment and social inclusion.

In all cases, the schools keep functioning as demonstration and learning sites, as well as central focus points for local economic development, relationship building, and collaboration. Any surplus created is reinvested in the school and its activities.

The average time from start to when a community starts to really feel the impact of a Greening Schools project is around 2 years.

GREENING SCHOOLS AND GREEN ECONOMY IN KAPIRI MPOSHI AND MONZE

During 2018 - 2020 we worked together with six schools in the Zambian districts of Kapiri Mposhi and Monze - Shipungu, Katuba, Mwala, George Ndashe, Materlo and Nabukuyu.

As the communities mapped their needs, it became clear that here too, what community members worried most about was nutrition and food security. As a first step, children, youth and community members had the chance to prepare school grounds to grow organic food, and learn how to install simple systems for harvesting rainwater, to water the new school gardens. Through creating food gardens and building water catchment systems, students and community members together learnt both theory and hands-on skills related to Permaculture, Agroecology, sustainable agriculture, rainwater harvesting and water conservation, and green building. Teachers also had the opportunity to include material on the water and carbon cycles, appropriate technology, and traditional ways of being in relationship with the land.





A lot of attention was then given to developing new and regenerative economic opportunities and the skills to start and run socially and ecologically responsible micro-enterprises. Many of the people who took part in activities were young people fresh out of school, women, and single mothers, who all got a chance to continue their learning and build both capacity and support for creating their own sustainable livelihoods.

Together, communities and the project team mapped locally available resources and business opportunities, and in response to what was found, organised a second series of workshops and learning opportunities on school grounds, focused on social enterprise development and the particular skills needed to turn local opportunities into economic activity. This included topics such as recycling and waste management, marketing strategies, High Value Agricultural Products, product development and value-added products, biofertilisers, energy-efficient rocket stove construction, pottery and basket making. A week-long Training of Trainers in adding value to agricultural products was also held, attended by 53 participants, 28 of them being women, from the five participating communities.

Together, community members also formed social enterprise learning groups in each village. These developed strategies for income generation by learning and doing together in a participatory way. Three groups were created as a strategy for social enterprise development:

The Production group, that was responsible for growing crops, the raw materials that would then be processed and marketed. Examples included lemongrass for producing essential oil, fruit trees for making jams, and drought-tolerant perennial crops such as moringa, neem, and castor beans.

The Value-addition group was responsible for processing raw materials, transforming them into products with a higher economic value. This was a particularly popular group, with many people interested and wanting to join. Examples of activities included turning herbs and aromatic crops into soaps, lotions and oils as well as creating moringa nutrition powder.

The Marketing group was responsible for developing ways to creatively present the value-added products to markets and customers in the surrounding villages as well as cities across the country. This turned out to be a difficult task, and an area where many people faced obstacles, making it useful but sometimes frustrating and difficult to engage.

RESULTS/IMPACT

As the projects progressed, farmers in neighbouring communities expressed interest in joining the activities, and agroecology skills have continued to be shared whenever farmers are gathered. The lemon grass oil grown and processed at Shipungu school was shipped to Lush Cosmetics for tests. Lush is a company based in the UK devoted to creating ethically-sourced cosmetics, and could prove an important ally and purchaser of community products.

The greatest accomplishment was perhaps that students who have now left the schools, have become trainers or entrepreneurs in their own right, teaching others what they have learnt, and setting up their own regenerative projects and businesses.

During the 2018-2020 projects in Shipungu, Katuba, Mwala, George Ndashe, Materlo and Nabukuyu

- 2.000+ children from 6 schools (in 2 districts) participated (SDG 4).
- 6 schools created rain water harvesting systems (SDG 6, SDG 4).
- 150+ families learned about climate resilient farming methods (SDG 2, SDG 13).
- 230+ farmers (of whom 100+ are women) attended workshops in sustainable farming techniques (SDG 2, SDG 4).
- 100+ farmers adopted organic and climate resilient farming methods (SDG 2, SDG 15, SDG 13).
- 360+ local villagers (of whom 100+ are women) attended workshops on adding value to agricultural products (SDG 4, SDG 5).
- 8 social enterprises started, many of them involving women and young people without other economic opportunities (SDG 8, SDG 5, SDG 10).
- 6 regions started growing lemongrass as part of a shared social enterprise focused on producing essential oil (SDG 8, SDG 9).
- A significant increase in monthly income for some households, gained by selling value-added products (SDG 1, SDG 8).





CONCLUSION / FINAL THOUGHTS

This manual presented a systematisation of our learnings from 31 years of working with schools in Sub-Saharan Africa to create opportunities for sustainable local development and regenerative enterprise, and distills our approach to using schools as focal points for building capacity for holistic climate change adaptation through practices grounded in local culture, society and ecosystems. It also presents a glimpse of the work and impact of the Greening Schools Programme in 6 Zambian schools and communities.

GEN and ReSCOPE firmly believe that effective climate solutions honor both human rights and the rights of nature, and that empowered, local and democratic communities stewarding their own energy, land, and water, are the best answers to combating exploitation of both humans and ecosystems.

We hope what we have shared can be of use and inspiration in diverse learning environments and community-based initiatives, as well as for those interested in holistic, participatory, just and regenerative community development. We are now scaling and developing the approach, engaging community schools all over the world in taking the next steps towards education for sustainable development together. If you are interested in engaging more with the Global Ecovillage Network and our work with schools inside and outside of **ecovillages, you** are always welcome to get in touch with us at welcome@ecovillage.org

