



Monthly newsletter on issues
of sustainable development

DEVELOPMENT ALTERNATIVES

Energy.
Communities.
Climate Proofing



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Development solutions are needed to promote green and inclusive growth and address multiple layers of challenges. In this editorial, Kanika Verma discusses how green and inclusive entrepreneurship can contribute towards constructing sustainable and resilient micro-economies. While observing that there is a 'missing middle' in the global policy framework, she argues that a suite of instruments, created collaboratively, is needed to enable an inclusive and green transition in economies.

Navigating the Road to UNFCCC COP28

India has championed the concept of sustainable living through 'LiFE lifestyles for the environment' and has gained international support for its green development pact. In this article, Dr Swayamprabha Das and Vaishali talk about India's multifaceted approach to tackling climate change. They also argue that India should continue to push for the interests and aspirations of emerging economies.



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As the threat of climate change increases, the need for collective action is becoming more critical than ever. In this article, Myron Mendes discusses the role of Locally Developed Choices in empowering communities on various aspects of climate, finance, and education. Myron believes that in the realm of sustainable development and climate action, LDCs have a robust strategy for climate-proofing our future.

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Trade operations have positive economic and environmental impacts like job creation, economic growth, and technology transfer, but they also contribute to greenhouse gas emissions and waste generation. Shakti Sustainable Energy Foundation in association with the Centre for American Progress and Society for Development Alternatives is organising a side event to discuss the challenges and opportunities of green trade operations. It will be held on 3 December 2023 from 11:30–13:00 h (Gulf Standard Time) at the UNFCCC Pavilion.



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Investing in Climate Change Education (CCE) is critical for creating a sustainable and resilient future. Myron Mendes highlights the importance of CCE in empowering individuals and communities to adapt to the challenges of climate change. As education plays a significant role in addressing the climate crisis, he says effective CCE should be customised to local contexts.

De-centralised Renewable Energy Applications in Climate Action

India aims to generate 500 GW of renewable energy by 2030. This article discusses the potential of de-centralised renewable energy (DRE) applications to help bridge the energy divide quickly, affordably, and sustainably. As these technologies are cost-efficient, have a lower footprint, and align with adaptation and resilience aspects, they have the potential to demonstrate their positive climate actions.



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Twenty-five-year-old Anand Sahu runs an oil expeller and flour mill business at home. This article enumerates Anand's successful transition to solar energy. Sudhir Sah tells us how Anand has been able to reduce energy costs and mitigate 2 tonnes of carbon emissions every month, enabling him to decrease the processing costs as well.



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The views expressed in the articles in this newsletter are those of the authors and not necessarily those of Development Alternatives.

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Cover Photo Credit: Development Alternatives

Published By: Development Alternatives

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Green and Inclusive Entrepreneurship for Job Creation



Women leading the pathway of green entrepreneurship to build robust local economies

Over the past few decades, rapid economic growth has presented an opportunity to address challenges such as deepening inequality, lack of social cohesion, environmental degradation, and concerns about the exclusion of diverse population groups. The pandemic has further triggered the most severe crisis in decades and resulted in a setback in progress towards equitable access to decent work, exacerbated by rising inflationary pressures, policy uncertainties, and persistent labour market challenges.

Its impact has been much more pronounced in the Global South, recognised with layers of informality and complexity presented by a spectrum of unemployment. To

address these multiple layers of challenges, development solutions are needed to not only promote **green and inclusive growth** but also **build new micro-economies** where progress is based on equitable growth and social well-being.

Going forward, development solutions need to account for these multiple layers of challenges, while also being cognisant of the changing dimensions of the 'future of work'. This will be critical in not only promoting inclusive growth and prosperity but also contributing to a more equitable and cooperative global community.

Green and inclusive entrepreneurship has emerged as one of the key systemic responses to the rapidly

changing dynamics of employment and climate change. It not only caters to the growing workforce but also contributes towards a shared vision of constructing sustainable and resilient micro-economies. However, there is an evident 'missing middle' in the global policy framework, as informal mini or nano enterprises often get lost in the broad definition of micro-enterprises. These enterprises are job creation engines of the local economies but often lack access to formal finance systems and enabling ecosystems.

The full potential of the opportunities of grassroots entrepreneurship cannot be achieved by a 'one size fits all' approach developed by single actors, but by aligning collective efforts. This will require a five-pronged approach with a focus on designing and implementing the following:

- A place-based approach that focuses on the unique strengths, resources, and challenges of specific geographical regions.
- A guided transition for micro-enterprises through a hybrid model of informal formality, which would enable them to formalise operational processes such as digitisation.
- New forms of sustainable finance, including green finance for micro-entrepreneurs.
- Human-centred policies focusing on social protection and economic

inclusion, especially for women and youth and investment strategies for critical future-proof sectors, including manufacturing, healthcare, technology, education, and environment

- Policy reforms for the missing middle that recognise the significance of small-scale micro-enterprises as drivers of innovation and job creation.

Thus, a suite of instruments, created collaboratively, is needed to create decent entrepreneurship opportunities for all, especially for women and youth from underserved regions. This will not only enable a just, inclusive, and green transition in economies but also enable a shift from need-based entrepreneurship to aspiration and opportunity-driven entrepreneurship. By building an ecosystem for green and inclusive entrepreneurship, we can unlock the true potential of innovation and drive sustainable progress for both individuals and the wider community. We believe that it is perhaps the only way for millions of people to secure meaningful, dignified livelihoods, for communities to adapt to the effects of climate change and for economies to create a sustainable net-zero future.



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Navigating the Road to UNFCCC COP28

India, as a pivotal force in the fight against climate change, has covered new grounds during its G20 Presidency in 2023, building upon its green agenda at the earlier UNFCCC COP 26 wherein the Hon'ble Prime Minister introduced the concept of 'LiFE – lifestyles for the environment'. The G20 members unanimously adopted the 'High-Level Principle on LiFE – lifestyles for sustainable development' in the Green Development Pact in the G20 Leader's Declaration 2023. The Green Development pact, lays, emphasises on climate change, just energy transitions, biodiversity conservation, and combatting plastic pollution, and can provide a green pathway to the UNFCCC COP 28.



Group discussion on sustainable farming and water management with the dedicated women members of the Pond Rejuvenation Committee in Mudara Village, Bundelkhand.

As a leader of the Global South, India prioritises integrating climate adaptation into national development plans. It advocates for a systemic approach, fosters South-South cooperation, and proactively shapes the international climate agenda, emphasising solidarity and collaboration. Leadership through Nationally Determined Contributions (NDCs) is a cornerstone of India's climate strategy. India has not only achieved all its NDCs nearly a decade earlier than committed but also submitted an updated NDC to the UNFCCC in December 2022. This commitment is demonstrated through core targets such as

a 45% reduction in the emissions intensity of GDP by 2030, 50% of electricity from non-fossil fuel-based resources by 2030¹, and the promotion of sustainable lifestyles through Mission LiFE. Aligned with the Panchamrit elements from COP26, India is positioning itself to achieve net-zero emissions by 2070, offering a realistic template for other emerging economies while emphasising the importance of international collaboration and shared responsibilities.

Despite constituting 17% of the world's population, India contributes only 4% to the global carbon dioxide load, amounting to approximately 2.2 tonnes per capita emissions². This showcases the country's responsible energy consumption habits and reaffirms the government's commitment to environmental stewardship through energy transition actions. These efforts align with the imperative to limit the global temperature rise to under 20Celsius.

The recently released FICCI Deloitte report on India's energy-transition pathways estimates the country will require a massive US\$ 15 trillion investment to achieve its net-zero emissions target by 2070. This significant investment is in the context of India's final energy demand, which is expected to double to about 1200 Mtoe (million tonnes of oil equivalent) by 2070 in a net-zero scenario with aggressive energy efficiency measures.

Leadership through Climate Action Agenda

The urgency of collective action to combat climate change is underscored. India should continue to push for the interests and aspirations of the emerging economies, the Least Developed Countries (LDCs) and the Small Island Developing States (SIDS). India is already providing support to many countries, and should continue

to focus on South-South collaboration and technology transfer that is low cost and affordable and promote local solutions driven by community actions. Operationalising the Loss and the Damage fund should be favourable to the affected countries and transparent and flexible. Additional burdens through interest rates and conditionalities should be avoided, and India, can lead this deliberation and ask for the establishment of the fund in a developing country and be managed by an independent mechanism.

Urbanisation, a global phenomenon, presents both challenges and opportunities. While urban centres significantly contribute to carbon emissions, transformative changes focusing on responsible consumption and production, resource efficiency, and circularity through green technologies can bring down carbon emissions and contribute to building liveable cities. India's electric vehicle market is rapidly evolving, with a projected annual growth rate of 49% between 2021 and 2029³. The National Electric Mobility Mission Plan and FAME Phase I and FAME Phase II and programmes such as the National E-Bus Programme and the Shoonya campaign, India has positioned itself as a global leader in electric mobility, inspiring other countries to follow suit.

Putting nature, people, lives, and livelihoods at the heart of climate action is crucial. Women and girls are impacted disproportionately by climate change, especially in vulnerable countries, and, hence, climate action should have a gender lens. It may also be recognised that women and girls can play an equal role in offsetting carbon emissions through energy conservation and efficient resource management. Green local enterprises have demonstrated the potential to accelerate emissions reductions while ensuring energy security. Natural farming, agro-forestry, sustainable agriculture practices, and integrated water management can reduce carbon emissions while providing

multiple benefits, including food and livelihood security. Oceans and climate interlinkages are crucial to addressing the vulnerability of coastal communities and their livelihoods through financial and technological support like early warning systems and disaster risk reduction measures. Protecting most critical systems from extreme weather and biodiversity loss requires a robust framework for the global adaptation goals. Lastly, fast-tracking energy transition should have ambitious climate action at its core that calls for a steady flow of finance and technology. India should call for a transparent and accountable system to be put into place to track these funds' flow against the pledges.

India's multifaceted approach to tackling climate change, showcased during its G20 Presidency, positions it as a global leader in climate action. It has already set new benchmarks for international collaboration, technology sharing, and policy coherence, leading towards a shared commitment to address the pressing challenges of climate change. As the world anticipates COP28, India's proactive stance, initiatives, and collaborations underscore its commitment to shaping a sustainable future, echoing far beyond its borders. □

End Notes

- 1 <https://pib.gov.in/PressReleasePage.aspx?PRID=1885731#:~:text=The%20Minister%20of%20State%20for,50%20percent%20cumulative%20electric%20power>
- 2 https://unfccc.int/sites/default/files/resource/India_LTLEDS.pdf
- 3 <https://www.investindia.gov.in/team-india-blogs/indias-ev-economy-future-automotive-transportation#:~:text=The%20Economic%20Survey%202023%20predicts,and%20indirect%20jobs%20by%202030>

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Development Alternatives

Locally Developed Solutions: Climate Proofing Our Future from the Ground Up

In a world facing the escalating threat of climate change, the need for collective action has never been more pressing. While national commitments like Nationally Determined Contributions (NDCs) shape global efforts, the transformative power of Locally Developed Choices (LDCs) is equally crucial. INECC recognises the pivotal significance of LDCs, which empower communities through climate education, finance, and policy.

The Significance of Locally Developed Choices

LDCs embody a bottom-up approach, empowering communities to implement solutions tailored to their unique needs. Beyond national targets, LDCs foster ownership and engagement, leveraging local knowledge for culturally sensitive, socially relevant, and innovative solutions.

Harnessing Local Innovation and People-Centric Solutions for a Climate-Just Future

Harnessing local innovation is key. LDCs provide a platform for communities to adapt to climate change, ensuring action is grounded in local realities. This approach addresses climate justice, focusing on building resilience and enhancing adaptive capacities for marginalised communities. This focus on equity ensures that no one is left behind in the face of climate change, creating a more just and inclusive future for all.

The Vital Role of Green Start-ups and Small Green Businesses in Sustainable Solutions

Green start-ups and small green businesses play a vital role in sustainable solutions. Beyond entrepreneurship, they contribute to mitigation, adaptation, and disaster response. Their innovative approaches can potentially create green jobs and facilitate a socially just transition.

Integrating LDCs into NDCs: A Pathway to Enhanced Climate Action

Integrating LDCs into NDCs bridges the gap between national commitments and local realities, fostering a harmonious relationship between national and local efforts. This alignment maximises the impact of climate action, creating a truly sustainable future.

Nurturing Climate-Resilient Communities: A Dynamic Nexus of Education, Finance, and Policy

INECC's experience over time has successfully peeled back the layers of LDCs, revealing them as a dynamic force in the realm of sustainable development and climate action. LDCs operate as a bottom-up mechanism, empowering communities to contribute actively to climate resilience and adaptation and prepare them for future climate risks.



The success of LDCs relies on communities that are well-informed and empowered, possessing the knowledge and skills to address local climate challenges. Climate education is essential for fostering a sense of ownership among community members, enabling informed decisions and actively shaping their climate future.

Additionally, the indispensable role of climate finance in amplifying the impact of LDCs cannot be overstated, emphasising the significance of financial resources to initiate and scale up sustainable climate actions tailored to unique community needs. Access to climate finance is crucial for unlocking the potential of LDCs and transforming them into a powerful force for sustainable development and climate action.

Furthermore, recognising the vital role of conducive climate policy in creating an environment for successful LDC implementation is imperative. Policies at various levels must align with and support locally developed choices to maximise effectiveness. A conducive climate policy provides the necessary framework and support for LDCs to thrive and contribute significantly to a sustainable future.

Integrating climate education, climate finance, and conducive climate policy as catalysts for LDCs has emerged as a robust strategy for climate-proofing our future. □

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Trade in a Climate-Constrained World: Creating Value from US Construction Workers to Female Entrepreneurs in India

Organisers:	Centre for American Progress and Society for Development Alternatives
Date:	3 December 2023
Time:	11:30 am–1:00 pm Gulf Standard Time
Venue:	UNFCCC COP 28, Dubai, UAE

Trade operations have both positive and negative socio-economic and environmental impacts. Some positive implications include job creation and economic growth, improved access to goods, increased income and foreign exchanges, technology transfer, etc. However, trade operations significantly contribute to greenhouse gas (GHG) emissions, waste generation from packaging, shipping, maritime pollution, etc. Therefore, measures have commenced to promote green trade by facilitating the exchange of environmental goods and clean technologies, and promoting sustainable practices to mitigate emissions.

Major economies have proposed trade instruments to create and enhance incentives for innovation in clean technologies and support affordable innovations through accelerating the diffusion, dissemination, and deployment of low-carbon goods and services. Instruments such as the European Union's Carbon Border Adjustment Mechanism (CBAM), the United States of America's Inflation

Reduction Act (IRA), etc., aim to equalise the GHG fees and spur market demand for materials having low embodied GHG emissions. Further, a Free Trade Agreement (FTA) is also being negotiated between India and the EU on various agricultural products, dairy, pharmaceuticals, etc. This trade agreement proposes to create employment opportunities in India; however, details are still being negotiated.

The imposition of these green and free trade instruments is yet to answer a few pertinent questions about its economic implications, the compliance burden on developing nations, and the impact on trade laws, including:

- What are the economic implications of climate trade policy levers on the economy and competitiveness of developing nations?
- How can green trade operations support balancing economic growth, environmental protection, and social well-being in developing nations?

- How will the proposed FTA between India and the EU interplay with the green trade mechanism proposed by the EU?
- What are the implications of trade agreements on specific products and sectors such as mining, green hydrogen, steel, etc.?

Shakti Sustainable Energy Foundation, in association with the Centre for American Progress and Society for Development Alternatives, is organising an event titled 'Trade in a Climate-Constrained World: Creating Value from US Construction Workers to Female Entrepreneurs in Dubai '

on 3 December 2023 from 11:30–13:00 h (Gulf Standard Time) at the Blue zone (UNFCCC Pavilion).

The event will deliberate on the economic challenges and opportunities of green trade operations and discuss strategies to promote local economic opportunities and green, resilient, and inclusive development in developing countries. □

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Climate Change Education: Empowering Lifelong Learning for a Climate Proof Future

In the face of an escalating climate crisis, education has emerged as a powerful tool for fostering resilience and unlocking sustainable solutions. Climate Change Education (CCE), when tailored to local, social, and cultural contexts, has the potential to empower individuals and communities, unlocking climate finance and driving dialogues on policy and advocacy frameworks.

Contextualising Climate Change Education for Local Impact

Effective CCE must recognise the diversity of climate change impacts and vulnerabilities across different regions and ecosystems. By understanding local contexts, educators can design programmes that address specific challenges and opportunities, empowering individuals to adapt and thrive in a changing climate.

Empowering Climate-Resilient Citizens through Innovative Approaches

CCE goes beyond traditional classroom learning, encompassing a range of innovative approaches that engage learners in hands-on experiences and participatory decision-making. From community gardens and citizen science projects to gamification and interactive storytelling, capacity-building and green skill development, CCE fosters critical thinking, problem-solving, and a sense of ownership in addressing climate change.

Unlocking Climate Finance Through Education

CCE plays a crucial role in unlocking climate finance for local climate solutions as informed and educated individuals are crucial for implementing sustainable solutions to environmental challenges. Climate change education empowers communities to gain a deeper understanding of climate issues, leading to better and greener solutions and access to climate finance.

Financing Climate Change Education

Investing in climate change education is paramount to addressing the pressing environmental challenges of our time. This investment will cultivate a skilled workforce equipped to devise mitigation, adaptation, and disaster risk reduction strategies. In response to rapidly changing climatic conditions, we must urgently foster a global understanding of climate change's scientific, policy, and socio-economic dimensions. Adequate funding will ensure the development of educational programmes, research initiatives, and outreach efforts that empower individuals and communities to make informed decisions and actively combat climate change. Prioritising and expediting the financing of climate change education is essential for a sustainable and resilient future.

Driving Dialogues on Policy and Advocacy Frameworks

CCE equips individuals with the knowledge and skills to engage in informed discussions about climate policy and advocacy. By fostering a deeper understanding of climate change science, policy frameworks, and potential solutions, CCE empowers individuals to advocate for effective climate action.

Contextual and Socially Relevant Climate Change Education: A Catalyst for Resilience, Climate Finance, and Informed Policy

Contextual and socially relevant CCE, when approached from a lifelong learning perspective, empowers individuals and communities to adapt to the challenges of climate change while shaping a more sustainable future. By fostering resilience, unlocking climate finance, and driving informed policy discussions, CCE plays a pivotal role in building a world where climate change is not a barrier to progress but an opportunity for innovation and sustainable transformation. □



Climate change education

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De-centralised Renewable Energy Applications in Climate Action

With India's ambitious target of 500 GW of energy generation from renewable sources by 2030 ^[1], the role of De-centralised Renewable Energy (DRE) applications in energy security and equitable access to energy cannot be overlooked. This is especially crucial given that the per capita energy consumption in the country is not only low but also fraught with spatial

are instrumental in climate change mitigation more sustainably but also have the added advantages of aligning with adaptation and resilience aspects. Optimal utilisation through shared use benefits is specific to DRE applications.

BAIF programmes have promoted DRE applications primarily in solar photovoltaic, solar thermal, and bio-energy. Innovative DRE applications such as fractional solar pumps and household biogas with in-situ slurry value addition (Integrated Renewable Energy and Sustainable Agriculture – IRESA) have demonstrated their potential for positive climate actions.



Potential of DRE applications

disparity. DRE applications are best suited to bridge the energy divide fairly quickly without undesirable trade-offs and social–environmental costs. Localised control mechanisms and self-reliance complement energy use at the last mile. Cost-efficiency in terms of payback and cost-effectiveness in terms of investment scale are both favourable for DRE technologies, thus enhancing the affordability quotient. With their lower footprints, DRE applications

End Notes

[1] Ministry of New and Renewable Energy, Govt. of India

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Greenhouse Gas Inventorisation of the Brick Sector in Bihar for Developing Low Carbon Pathways in the Construction Sector

Brick-making an Important Economic Activity in Bihar

Bihar is one of the leading states in India in terms of action for a cleaner environment. The state government, led by the Bihar State Pollution Control Board (BSPCB), has undertaken several initiatives over the years to address greenhouse gas emissions and other pollutants.

Specific to the building materials sector, brick-making in Bihar is an important economic activity for many reasons. Secondary reports indicate that brick-making provides employment to around 7.7 million people and generates nearly a quarter of the state's gross domestic product. In addition, bricks sustain the local construction industry. Thus, brick-making in Bihar is an important rural enterprise and a significant contributor to the state economy.

As of today, burnt clay bricks dominate the landscape of Bihar's brick-making industry. Over the past two decades and more, Bihar has adopted a slew of measures to enhance the deployment of cleaner technologies for brick production. More recently, BSPCB has adopted measures to phase out relatively inefficient brick-making technologies and encourage more efficient equipment in brick production.

Currently, about 7757 burnt clay brick kilns are manufacturing approximately 22 billion bricks annually. In the state, a number of brick-making technologies

are prevalent, including the Fixed Chimney Bull Trench Kilns (FCBTK) and Zig Zag Kilns (ZZK). These kilns use coal as the primary fuel. Around 453 Fly Ash Brick (FAB) making units also use fly ash from thermal power plants to produce the bricks.

Using coal and other sources of non-renewable biomass leads to emissions of greenhouse gases, contributing to the threat posed by climate change.



To reduce climate change impacts and contribute to the Government of India's commitments to climate change as outlined in the landmark COP 26 declaration ([Glasgow, 2021](#)), the Bihar government has also committed to containing its greenhouse gas emissions. As one of the primary emitters of greenhouse gases in the state ([Bihar State Action Plan on Climate Change, 2015](#)), the brick-making sector focuses on reducing greenhouse gas emissions and charting a path for achieving carbon neutrality (net zero emissions).

In this regard, a study has been undertaken by Development Alternatives with the support of Shakti Sustainable Energy Foundation in association with BSPCB to analyse the greenhouse gas inventory of the brick sector of Bihar and develop a road map for low-carbon pathways.

Analysing the Data

For this, the team at Development Alternatives collected data from BSPCB on the numerous brick kilns within the state. Based on the data and secondary literature studied, the team ventured onto the field

to understand the manufacturing process and emissions released by this informal sector. The quantification of emissions was regarding its manufacturing processes such as the kind of raw material, fuel, technology, and its final dispatchment to the sellers. By this means, the team was able to conclude that this sector emits approximately 12 million tonne of CO₂ per annum. Considering this, various scenarios were developed, which applied to the state and showcased its carbon emissions.

One of the scenarios is depicted in Figure 1; which analyses the population growth in Bihar. By this means, one could predict the development that will take place within the state, thus allowing for the majority of the built-up area that is yet to come up and the demand for bricks within the state (Figure 2).

By showcasing this scenario, it is meant to develop the state's road map to reach carbon neutrality by 2050. If one does not start to curb its emissions from the various sectors, then there is no way in which the world will be able to limit the temperature increase to 2°Celsius. □

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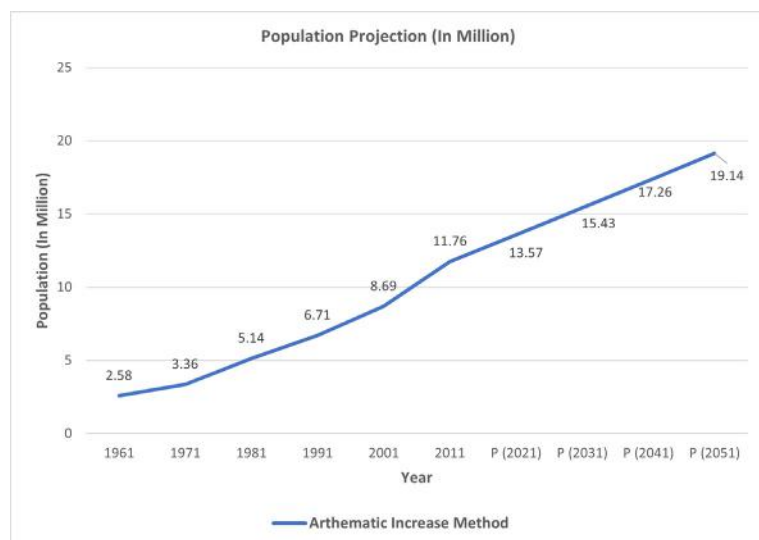


Figure 1 Population projection in Bihar

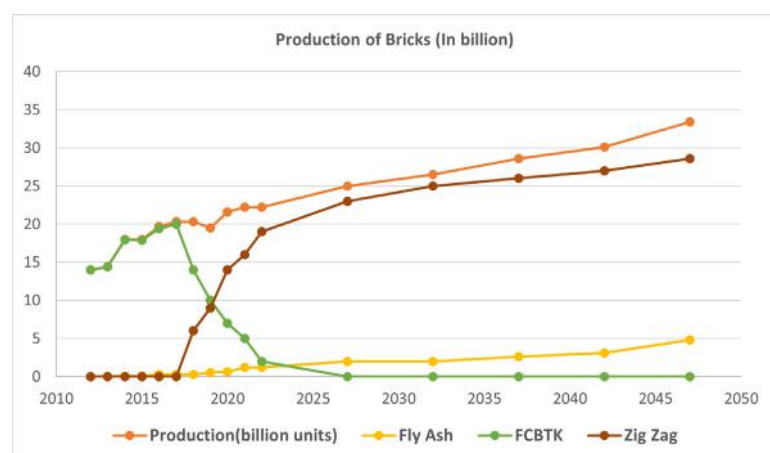


Figure 2 Projection pf brick production in Bihar

A Sunny Solution: An Entrepreneur's Leap to Solar Power



Anand Sahu, a 25-year-old entrepreneur from Sakrar village in the Jhansi district, has a family of five members engaged in their respective work. For five years, Anand's father has been running an oil expeller and a flour mill business near the local market. While pursuing his Masters of Commerce degree, Anand helped his father run the business. However, upon completion of his studies, Anand did not succeed in getting employment despite applying to many places due to an unfavourable job market.

The family faced another challenge when his father lost his property/enterprise due to construction work on the highway. Anand convinced his father to operate the business from their home. He took the responsibility of running the oil expeller and flour mill venture, thus allowing his father to focus on the farm work.

Anand started running the business on a diesel-based power generator, which incurred huge expenses as fuel prices rose, costing upwards of INR 20,000 per month. Regardless, the business was profitable.

Given the rise in fuel prices, Anand began thinking of alternative ways to power his mill and cut the overhead costs. That was when he met with the representatives of TARA, an entity of the Development Alternatives Group. He discussed his challenge with the rising fuel costs and inflation with the team. The conversation helped him understand other alternative forms of energy, such as solar power as an option for his business. Having weighed the pros and cons of switching to solar energy, Anand made the leap and installed a 13 kWp



Installing the Rooftop Solar System

(later increased by 2 kWp to 15 kWp) roof solar setup for his enterprise.

The transition was successful and the results are impressive. The energy costs have been reduced by up to 70%, an average of 2 tonnes of carbon emissions are mitigated every month, and the processing costs have decreased, much to the satisfaction of the customers. ☐

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Reflecting on COP27

The urgency to act has never been greater as the world faces increasing climate-related disasters, rising sea levels, and extreme weather events. At the onset of COP28, which is set to take place in Dubai in December 2023, it is imperative that we take a glance back at the last edition, COP27.

One of the key objectives of COP27 was to review and enhance the implementation of the Paris Agreement. The Paris Agreement was adopted in 2015 and aims to limit global warming well below 2°Celsius and pursue efforts to limit the temperature increase to 1.5°Celsius. At COP27, countries assessed their progress in meeting their emissions reduction targets and pledged more ambitious actions.

At COP27, civil society organisations such as the Development Alternatives (DA) Group had the chance to showcase their efforts towards achieving a Net Zero future, including using cutting-edge technologies to

decarbonise industries both at the grassroots level within the country and on a global scale.

Several side events were organised in different venues, including the Indian industry's initiatives towards achieving net zero emissions. The events also highlighted profitable and replicable mitigation technologies, processes, and products that can be used to decarbonise the construction sector. The overall emphasis was on a cooperation approach that will particularly benefit emerging economies and vulnerable countries in Africa, Asia, and the Pacific Islands.

Towards a Carbon-Neutral Bihar in the brick sector, the DA group also presented the success of the public-private partnership approach by showcasing its work towards a Carbon-Neutral Bihar in the brick sector. It highlighted the initiatives the Bihar government took to map the brick sector and devise strategies to turn it into a carbon-neutral sector. The event showcased the baseline



studies and innovative solutions implemented to reduce the brick sector's greenhouse gas emissions.

The technology of Limestone Calcined Clay Cement (LC³)—a sustainable alternative for the cement industry—was presented on multiple occasions. The Indian pavilion showcased the country's efforts, supported by cement companies, to develop and incubate technology for combating climate change in the construction sector. At the Blue Pacific pavilion, the Blue Concrete Initiative was launched to investigate a transition to low-carbon concrete in the Pacific Region under the leadership of Fiji. Upon analysing the events, it is evident that LC³, developed by the Swiss, Cuban, and Indian universities will be vital in building tomorrow's green cities and the much-needed infrastructure in the Global South.

The event that took place was of unparalleled scale, where countries came together to discuss and negotiate international climate policy. It attempted to address other pressing climate-related challenges, such as adaptation and resilience, loss and damage associated with the impacts of climate change, and the role of technology in achieving climate goals.

It also addressed the issue of climate finance. Developed countries have committed to providing financial support to developing nations to help them mitigate and adapt to the impacts of climate change. However, many developing countries argue that the promised funds have been slow to materialise.

Taking on the urgency to address the increasing climate crisis and the need to strengthen global climate action, the DA Group aims to capitalise on the oncoming COP28 and make it truly a pivotal summit to present solutions for people and the planet.



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Development Alternatives @ COP28

30 November - 12 December 2023

Side Event
Blue Zone -
RCF Pavilion

Saturday,
02 Dec 2023

Energy Transition
Planning at the
Sub-National Level

DA +
Shakti Sustainable
Energy Foundation

Side Event
Blue Zone -
TERRE GCC

Saturday,
02 Dec 2023

Green and Inclusive
Micro-Economies
for a Climate-Smart
and
Sustainable Future

DA +
BAIF and TERRE Policy

Side Event
Blue Zone

Saturday,
02 Dec 2023

Locally Determined
choices for Nationally
Determined
Contributions:
Towards Climate
Proofing vulnerable
Communities
in Emerging Economies

DA + INECC, LAYA,
Clima Crew, CLEAN,
SCINDEA and BAIF

Side Event
Blue Zone

Sunday,
03 Dec 2023

Trade in a
Climate-Constrained
World: adding
value from US
manufacturing
to Indian
entrepreneurship

DA +
Shakti Sustainable Energy
Foundation and CAP 20

Side Event
Blue Zone -
AGFUND Pavilion

Monday,
04 Dec 2023

Building Climate
Resilience For Women
Entrepreneurs Through
Digital Innovation
And Women Financial
Empowerment

DA +
AGFUND, Scale 2Save
and WSBI

Side Event
Blue Zone

Wednesday,
06 Dec 2023

Just Energy
Transition in
South Asia - Positioning
health as a positive
outcome

DA +
SDPI, CHD Group,
IYCN and CNRS

Exhibit
Booth 41

04-06 Dec 2023

Alternative
Technologies
that help the
Decarbonisation
mandate.

DA +
IVL Svenska Miljöinstitutet

Our Partners

Development Alternatives @ COP28



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Owner and Publisher: Dr. Ashok Khosla on behalf of Development Alternatives



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