

RESEARCH

Engineering Sudan's Post-Conflict Reconstruction: Lessons from Global Experiences for Sustainable Recovery

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ABSTRACT

PURPOSE: This paper examines Sudan's post-conflict reconstruction, drawing lessons from global experiences. It focuses on community engagement, sustainable infrastructure, and inclusive development as key factors for recovery

DESIGN/METHODOLOGY/APPROACH: The study employs a comparative analysis of successful and failed reconstruction cases from countries such as Rwanda, Bosnia, and South Africa, as well as Iraq, Afghanistan, and Syria. The paper focuses on key elements such as stakeholder collaboration, governance, and resource management to offer a comprehensive framework for Sudan's recovery.

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FINDINGS: The research highlights critical factors, the necessity for early political cohesion, transparent governance, and effective project management to mitigate risks and prevent economic stagnation. The study further emphasises the need for a strategic, community-driven approach in Sudan's post-conflict reconstruction efforts.

ORIGINALITY/VALUE: This research offers a framework for Sudan's post-conflict recovery by combining lessons from global experiences with Sudan's unique context. It provides practical recommendations for successful reconstruction.

KEYWORDS: *Post-conflict reconstruction; Sudan recovery; Global experiences; Community engagement; Sustainable infrastructure; Inclusive development; Project management.*

INTRODUCTION

Rebuilding war-torn nations like Sudan involves addressing complex economic, political, social, and institutional issues. The current conflict triggered one of the biggest displacement crises globally, displacing over 14 million people. Crisis, drought, and floods have aggravated food insecurity and pressed affected and host communities.

The loss of basic infrastructure, education, health, energy, water and sanitation, transport, and telecommunications hampers recovery. Widespread socio-economic impacts include job losses, disruption of food chains, health risks, and educational system devastation. To rehabilitate basic services, Sudan's recovery will need sustained domestic and international support to rebuild infrastructure and government institutions. Post-Conflict Reconstruction (PCR) is a difficult and multifaceted effort, involving economic reconstruction, emergency relief, and long-term stability.

Effective reconstruction needs to be led by local communities, with the rebuilding of security and governance institutions as a basis for sustainable peace. Development should address rebuilding infrastructure and social and political inequality that have made Sudan fragile.

National reconciliation, social cohesion, and inclusive governance must be integrated alongside rebuilding physical infrastructure in any meaningful reconstruction plans. With the causes of conflict resolved, Sudan can lay the foundations for lasting peace and stability. By ensuring equal access to resources and opportunities for all, including the marginalised, long-term recovery is assured.

This paper explores the policies required to stimulate Sudan's recovery. Using a qualitative approach, the paper will address infrastructure needs, people's participation, effective finance models, and best management practices of PCR (Figure 1).

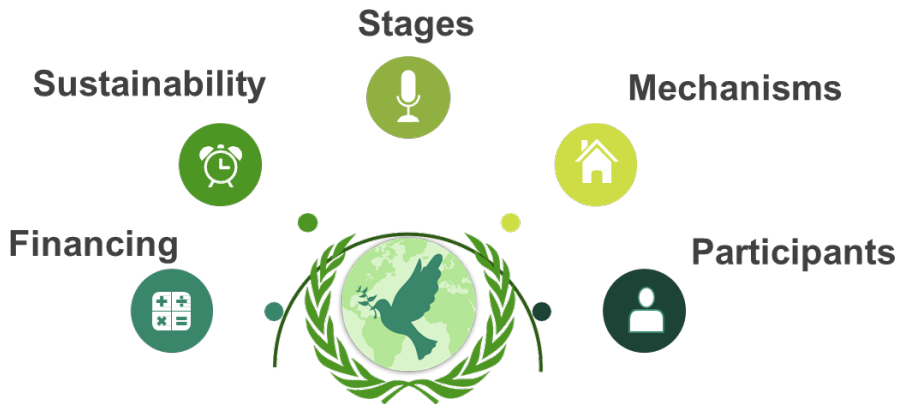


Figure 1: The Main Components of PCR Programmes

Source: Hassan, 2022

THEORIES AND CONCEPTS

Definition and Scope

PCR is the complex rebuilding of a state following conflict, where the objectives are to reconstruct physical infrastructures, political stability, economic activity, and social harmony (Rondinelli, 2007). Unlike development, which is concerned with long-term growth, reconstruction directly deals with post-war recovery and conflict prevention, including:

- reconstruction of physical infrastructure such as roads, schools, and utilities;
- **institutional reconstruction:** strengthening governance and the rule of law;
- economic recovery, including industry, employment, and economic stimulus;
- social recovery and reconciliation.

The aim is not to re-create pre-war circumstances but to offer a foundation for sustainable peace and development.

Key Theories and Models of PCR

Post-conflict recovery is guided by various theories and models (Calame, 2005):

- **Peace-Building Theory:** Repairing the causes of the conflict through national dialogue, reconciliation, and social recovery;
- **State-Building Theory:** State institution rebuilding, rule of law, and good governance will be central to Sudan's recovery and long-term stability;
- **Social Reconstruction Theory:** Concentrates on psychological recovery and social relationship rebuilding, especially between and among impacted communities.

Reconstruction mechanisms can be top-down, bottom-up, or hybrid, balancing international expertise with local ownership. Sudan's shattered political and social fabric would be best served by a hybrid approach.

Reconstruction Philosophy and Long-Term Goals

Reconstruction does not only imply rebuilding infrastructure but also addressing the root causes of conflict and guaranteeing sustainable peace. Recovery must be local, so that the locals can claim ownership of their recovery and establish self-sustainability. Recovery must strike a balance between relief in the short term and longer-term goals of stability, resilience, and peace-building. Involvement of international organisations such as the United Nations (UN), World Bank, and the African Union (AU) is crucial in terms of funding, technical support, and co-ordinating reconstruction, especially in the short term. Nevertheless, the ultimate objective must be building indigenous capacity and reducing external reliance. The future stability of Sudan hinges on collective political, social, and economic efforts, based on strong institutions of governance and justice, to achieve sustainable peace and development.

ENGINEERING ASPECTS OF RECONSTRUCTION

PCR is an integrated activity that includes engineering, social, and economic activities. This section covers the engineering aspect of PCR of war-torn areas, i.e., sustainable urbanisation, and how engineering can contribute to making societies resilient. Drawing from global experiences, it emphasises the importance of long-term solutions and community involvement in rebuilding infrastructure and society. Effective damage assessment is a basic starting point in the engineering process of post-conflict reconstruction. This involves analysing the extent of damage to physical infrastructure (Figure 2). Correct assessments are fundamental in setting priorities, efficiently distributing resources, and ensuring that PCR is compatible with long-term resilience goals.



Figure 2: Key Sectors Necessary to be Included for Damage Assessment

Source: Romanovych *et al.*, 2022

Complexity and Challenges in Post-Conflict Recovery

Conflict areas face specific challenges due to the collapse of infrastructure, political instability, and social disintegration. PCR has to address physical and social reconstruction, i.e., the reasons for the war. Physical reconstruction and humanitarian disaster relief achieve temporary stability, but permanent stability relies on the struggle against poverty, unemployment, and corruption. PCR includes rebuilding physical infrastructure, governance, social solidarity, and the economy.

Sustainable Urban Communities and Resilient Settlements

Urban renewal in conflict zones is not merely physical reconstruction, but reconciliation among citizens. Some of the most crucial engineering considerations are urban design to foster ethnic reconciliation and healing, and involvement of marginalised communities in the redevelopment process for participatory development.

Additionally, the creation of sustainable livelihoods for displaced persons and trauma counselling are critical to enable reintegration. War and displacement produce deep psychological trauma. Transitional strategies in the provision of shelter, the delivery of core services, and small-scale industrialisation are urgent for the short term and laying the foundations for recovery in the longer term. Sustainable economic development includes the revival of infrastructure, local employment generation, and local industry development. All these self-capacity and self-reliance initiatives are required at the local level so that the country will be less reliant on foreign aid and able to stabilise in the future.

Engineering for Sustainable Systems and Project Management

Sustainable reconstruction entails integrating infrastructure restoration and conservation. The top priorities are green energy, green building practices, and community participation. Engineers will have to work with local governments, international agencies, and communities in an attempt to conserve resources while ensuring long-term sustainability.

Project management in conflict and post-conflict environments demands rapid results, adaptability, and strong stakeholder co-ordination under extreme constraints. Voetsch and Myers (2005) highlight how conventional project approaches must be modified to address political volatility, security risks, weak institutions, and organisational dysfunction. Simplified tools such as milestone charts and checklists are often preferred over complex software due to limited infrastructure. Managing unrealistic expectations, maintaining cash-based operations, and ensuring knowledge transfer to national counterparts are critical for sustainable impact. Ultimately, success hinges on flexible planning, experienced staff, and the ability to deliver visible, short-term gains that build trust and pave the way for long-term reconstruction.

INTERNATIONAL EXPERIENCES IN POST-CONFLICT RECOVERY

PCR confronts numerous challenges, including reconstruction of economies, governance, social cohesion, and physical infrastructure. Conflicts have long-term regional and international implications, such as political instability, refugee flows, and economic instability. This section analyses the successes, failures, and lessons in rebuilding war-torn nations.

Sierra Leone: Rebuilding Through the “4Rs”

The 10-year Sierra Leone conflict (1991-2001) devastated the country, including infrastructure, government, and social institutions. PCR focused on the “4Rs”: repatriation, reintegration, rehabilitation, and reconstruction. External support, spearheaded by the UN and non-government organisations (NGOs), was important, especially in physical infrastructure reconstruction such as roads, schools, and health centres. However, disillusionment and corruption remained, necessitating political reform and local capacity building. Reconciliation required physical reconstruction and social reconciliation, together with efforts to address the disillusionment among youth. Sierra Leone is a lesson, where a high priority has to be accorded to infrastructure reconstruction, community involvement, and local capacity development for recovery in a sustainable manner. Collaboration with international agencies should never undermine the local leadership in reconstruction (Rugumamu and Gbla, 2003).

South Sudan: Pitfalls of Political Fragmentation

South Sudan’s independence in 2011 came with a 2013 civil war that displaced the new country’s infrastructure and its governing institutions. Political instability, ethnic rivalries, and excessive dependence on oil revenues delayed reconstruction. The key issues were bad governance, breakdown of disarmament initiatives, and weak involvement of the local populations in planning reconstruction. Despite their usefulness, international aid efforts were criticised for their lack of local accountability and political sensitivity. Effective recovery in South Sudan requires improving governance, diversifying the economy, and reducing political fragmentation. For South Sudan, the lessons learned relate to the need for comprehensive governance reforms, bridging ethnic divides, and avoiding political favouritism. PCR should also stop over-reliance on foreign aid and focus on domestic capacity building and economic diversification for long-term sustainability.

Rwanda: A Model for Unity and Development

Rwanda’s post-genocide reconstruction is a successful model for reconstruction. The centralisation of government authority facilitated rapid transformation of public administration, infrastructure, and national cohesion. Economic recovery ensured a stable currency, attracted foreign capital, and

prioritised Public-Private-Partnerships (PPPs). While socially successful in uniting the people, the Rwandan model has been accused of being overly efficient and of sacrificing political freedom. The task of rebuilding Rwanda's infrastructure, especially health centres, roads, and water systems, was crucial to its renaissance. Rwanda's community-driven focus, where locals were trained, ensured long-term sustainability. Sudan can also learn from a sophisticated community-centred approach with an emphasis on meeting local needs and resolving deep-seated social cleavages to unite the country (Rugumamu and Gbla, 2003).

Iraq: Rebuilding Amid Persistent Instability

Iraq was devastated by destruction, displacement, and ruined infrastructure from the 2003 war. Reconstruction has been tainted by constant sectarian violence, corruption, and abuse of aid. Foreign investment has been enormous (Figure 3), but Iraqi reconstruction has been slowed down by poor governance and excluding local stakeholders from decision-making. Infrastructure reconstruction was given top priority while ignoring political reconciliation and social cohesion. PCR can be successful if co-operation among regional, local, and international stakeholders is enhanced, population engagement is heightened, and consideration of long-term sustainable development is prioritised. Proper damage assessment, involvement of the public, open government, and effective monitoring mechanisms are crucial for the success of PCR (El-Ashmawy *et al.*, 2024). Sudan has to conduct proper damage estimates, engage locals in project planning, and distribute resources evenly in a bid to avoid inefficiency.



Figure 3: The Stabilisation Programme for Iraq

Source: El-Ashmawy *et al.*, 2024

Afghanistan: A Cautionary Tale of Aid Dependency

The reconstruction of Afghanistan was also hindered by politics, ethno-fragmentation, and insecurity. Billions of dollars failed to pay a dividend due to a lack of local interest after failing to consider Afghan political and cultural realities. Poor national planning and overdependence on international aid disenfranchised sustainable development. Local ownership of planning culturally relevant solutions, and the incorporation of psychosocial support in reconstruction are the key takeaways (El-Ashmawy *et al.*, 2024). Afghan practice has demonstrated that stability and security must be prioritised before major reconstruction can even be considered. Local capacity building and positive attitudes are crucial aspects of maintaining development.

Bosnia and Herzegovina: The Cost of Fragmented Governance

Bosnia's PCR, following the 1992-1995 war, was affected by ethnic fragmentation and a devolved state. The Dayton Accords entrenched politicised fragmentation and prevented recovery. Early efforts, led by the World Bank, succeeded in rebuilding basic infrastructure but these efforts were hampered by political fragmentation. Bosnia's experience highlights the importance of building integrated governance systems and ethnic co-operation to ensure a sustainable recovery (Calame, 2005).

Sudan must focus on inclusive governance systems, promoting co-operation among ethnic and political groups, and a multi-sectoral approach to deal with economic, social, and physical recovery.

Lebanon: Development without Social Equity

The rebuilding of Lebanon after its 1975-1990 civil war was undermined by its fragile political system and the involvement of outside actors in reconstruction processes. The Solidere scheme of private sector-driven reconstruction of Beirut's central city block succeeded in reviving the economy but disregarded social equity (Höckel, 2007).

The Lebanese example highlights the importance of reconciling economic recovery with political reforms and social justice. Sudan's recovery process must reconcile state-led programmes with the private sector and ensure that recovery does not foreclose participation by marginalised groups.

Gaza: A Case for Holistic, Inclusive Recovery

The reconstruction of Gaza after a series of conflicts is burdened with extraordinary challenges stemming from ongoing political turmoil and occupation. International reconstruction, led by the Arab International Reconstruction Authority (AIRA), focused on infrastructure at the expense of

political reconciliation and local ownership. Effective Gaza reconstruction must break away from top-down to more inclusive, bottom-up processes that involve local actors in decision-making, and prioritise resolving underlying politics (El-Ashmawy *et al.*, 2024).

Gaza's experience most clearly showcases the need for a comprehensive political, social, and economic strategy for sustainable recovery. For Sudan, reconstruction needs to address national unity first, local capacity building, and ensuring that reconstruction is linked with Sudan's national priorities.

Syria's Reconstruction Experience

The rebuilding of Syria provides a valuable lesson of having a political settlement before embarking on the rebuilding process. Rebuilding Syria was fragmented as there was no comprehensive political settlement. Sudan needs to place a high priority on the most inclusive political consensus in its efforts to unite the nation. For Sudan, demilitarisation of the armed groups and security concerns need to precede large-scale infrastructure development. Local people's involvement, inclusivity, and handling external interests will be essential to avoiding fragmentation and achieving long-term stability.

South Africa: Social Justice and Constitutional Reform

South Africa placed more attention on people-centred planning and addressing historical imbalances. The post-apartheid government used people-centred planning, empowering people as a means of supporting disadvantaged communities.

In Sudan, development must be inclusive before reconciliation can be used to ensure an equal share of opportunities and services in every sector of the country. South African reconciliation history, as seen through the Truth and Reconciliation Commission (TRC) can be used as a benchmark for Sudan's national reconciliation.

SUDAN'S RECONSTRUCTION STRATEGIES AND CHALLENGES

PCR Successes and Failures

Reconstruction in war is a challenging task. Successful reconstruction has emphasised the need for a sequenced approach that combines short-term stabilisation with long-term reforms. There must be concerted efforts to transition towards short-term relief and sustainable development; this involves the reconstruction of governance and economic systems.

Sudan's Reconstruction Strategies

Successful PCR is a multi-stakeholder process, with international donors and NGOs. Successful strategies include community empowerment, long-term planning, co-ordination across sectors, and adaptability. Transparency and accountability are paramount in establishing trust and sustainability. Capacity building and knowledge transfer will be vital, allowing local institutions to become the ownership body of the reconstruction process.

Developing economies require flexibility to local evolving circumstances. Emphasis should be placed on long-term sustainability rather than launching overly ambitious projects too early. Donors should limit their efforts to infrastructure or technical support.

Economic recovery has to address both short-term stabilisation and long-term institution building. Exchange rate control and managing inflation are short-term measures, while long-term reforms have to be focused on economic diversification and privatisation of state enterprises. Experiences from other post-conflict economies suggest that adaptability and just use of resources are necessary for supporting sustainable economic recovery.

Challenges in Sudan's PCR

Sudan faces political instability, weak institutions, ongoing security threats, and stretched finances. Improved governance, guaranteed security, and reconstruction funds need to be found; they will require co-ordination and sustained effort on the part of the international community as much as Sudanese actors.

Foreign aid, Sudan's rich natural resources and young population can contribute to the rebuilding of Sudan. Co-ordination with neighbouring and friendly nations will also be needed to recover infrastructure and make the country stable again.

Early recovery programmes will need to prioritise restoring core services, enhancing security, and stimulating economic activity. Local communities should lead recovery to ensure the maximisation of resilience and long-term growth. National leadership, local capacity building, and transparent mechanisms will be essential to making Sudan's recovery yield sustainable peace and development.

SUDAN'S RECONSTRUCTION STRATEGY

National Reconstruction Plan Formulation

Sudan must quickly initiate its national reconstruction plan in all dimensions: economic, political, social, and institutional. The plan needs to be inclusive with participative engagement of political parties, civil society, the private sector, and the international community. There is a need for co-ordination, transparency, and flexibility, especially in climate change adaptation processes.

Procuring Financing and Resources

Securing enough funding remains Sudan's biggest challenge for PCR. Strategies include debt relief negotiations, foreign direct investment (FDI) mobilisation, and attracting support from the Sudanese diaspora worldwide. The private sector needs to contribute technically and financially. To be able to deliver reconstruction needs, Sudan will have to devise innovative financing mechanisms that integrate with co-ordinated external assistance. The process can be initiated with a Sudan PCR international forum.

Security and Stability

Establishing security and building trust between the state and the people is critical. Peacebuilding will require the involvement of the international community. Comprehensive reforms in the security sector are required to develop a professional, inclusive, and accountable security sector.

Political Reconciliation and Social Cohesion

Political and ethnic cleavages are key obstacles to reconstruction. Political reconciliation and social cohesion will be the priority, with programmes such as a national dialogue, truth commissions, and grievance-addressing mechanisms to rebuild trust and cohesion.

Post-Conflict Reconstruction Phases

Reconstruction in Sudan will be accomplished in three phases:

- **Emergency Phase 1:** Addressing the most pressing humanitarian needs such as shelter, food, and health care;
- **Transition Phase 2:** Building of governance institutions, economic and social rehabilitation, and repatriation of displaced persons;
- **Reconstruction Phase 3:** Reconstruction of institutions, communities, and infrastructure with emphasis on sustainable development.

Co-ordination between these phases ensures short-term recovery in tandem with long-term goals.

Government Reconstruction and Institution Building

Government institution reconstruction is key to effective PCR. Sudan must prioritise:

- **Institutional Reform:** Capacity building of the judiciary and police through training and transparency reforms;

- **Inclusive Governance:** Ensuring that all political and ethnic groups are represented in governance, empowering marginalised communities, and promoting the fair distribution of resources;
- Sudan needs to institute anti-corruption policies to make sure that exploitation is prevented and reconstruction resources are used and allocated equitably.

Economic Recovery Management

Rebuilding Sudan's economy will involve rebuilding the infrastructure, revitalising the financial institutions, and promoting inclusive growth. Priorities include:

- **Infrastructure Reconstruction:** Restoration of the transport network, utilities, and public services;
- **Reconstruction of the Financial Sector:** Restoration of the banking sector to support economic growth and investment;
- **Private Sector Growth:** Encouraging domestic and foreign investment for increasing employment opportunities and achieving growth.

Social and Humanitarian Needs

Sudan must respond to basic social requirements, particularly healthcare, education, and community reconciliation. Priorities are:

- **Education and Health:** Rebuilding the health and education sectors to meet the long-term needs of the population;
- **Social Reconciliation and Cohesion:** Implementing reconciliation initiatives and trauma counselling to bring about social integration.

Regional Co-operation and Security

Regional co-operation is central to Sudan's recovery, particularly in:

- **Border Security:** Securing the borders against armed groups, hence secure the return of the displaced;
- **Cross-Border Trade:** Fostering trade and co-operation with the adjacent landlocked countries to reintegrate Sudan into the regional economy.

Reconstruction of Infrastructure and Re-establishment of Services

Sudan's infrastructure should be urgently repaired, particularly transport, electricity, and public services. They will be essential to the construction of recovery and reconnection among Sudanese communities.

Reviving Justice and Strengthening Reconciliation

Reconciliation and justice will be the stepping-stones to recovery for Sudan, with the following priorities:

- **Judicial Reform:** Establishing accountable and fair courts;
- **Accountability:** Ensuring accountability creates a framework for reconciliation and justice;
- **Law Enforcement Reform:** Rebuilding the security forces as human-rights based institutions;
- **Reintegration of Affected Communities:** Empowerment and counselling of ex-combatants and displaced persons.

Reconciliation in Post-Conflict Societies

Reconciliation goes beyond physical rebuilding and mending psychological wounds. Key mechanisms are:

- **Truth Commissions:** Offering avenues for speaking the truth and settling past atrocities;
- **Reconciliation through Development:** Social development on a socially inclusive basis in work, schooling, and healthcare will consolidate social coherence;
- **National Unity:** Consolidation of national unity and cultural acceptance of diversity will be integral to sustainable peace and stability.

KEY STAKEHOLDERS AND FINANCING MECHANISM FOR PCR

Main Actors in Sudan's Reconstruction

Sudan's reconstruction will involve multiple actors with critical roles. National and international actors must co-operate to make the reconstruction process sustainable, efficient, and equitable. The main actors are:

- **Community Involvement:** Local communities need to be involved in every step of reconstruction, from planning to implementation;
- **Local Governments:** Regional and municipal governments are at the centre of PCR. They oversee land, public services, and co-ordination, ensuring that the recovery is sensitive to local contexts;
- **Private Sector:** Contractors, manufacturers, private enterprises, and banks are needed in terms of access to expertise, resources, and technical capacity. PPPs can also render infrastructural development more efficient and reduce resource inadequacies;
- **National Government:** The government has the responsibility of guiding reconstruction at the strategic level, ensuring political stability, inter-sectoral co-ordination, and prioritising allocation of resources;

- **External Actors:** Donors, multilateral institutions, such as the UN and NGOs, will have a primary responsibility to provide technical, financial, and logistical support. They must organise their activities so as not to duplicate efforts and to ensure aid responsiveness to local needs (Rondinelli, 2007).

Financing Reconstruction

Reconstruction in Sudan requires a multilateral financing strategy. PCR requires mobilisation of resources from different sources. The most critical financing instruments are:

- After the war, Sudan will rely on grants, loans, and technical assistance from international financial institutions (e.g., World Bank, International Monetary Fund (IMF)) and bilateral donors. The assistance will comprise both emergency relief and longer-term development;
- FDI will be crucial to rebuild infrastructure and re-launch economic growth. The private sector can bring capital, technology, and expertise;
- Sudan will also need to emphasise domestic resource mobilisation via tax reforms, PPPs, and diaspora flows. Strengthening domestic revenue streams will reduce foreign aid dependency and increase economic sovereignty;
- Multilateral debt relief will form a central component of Sudan's financing approach. This will alleviate the debt burden and facilitate reinvestment in priority reconstruction projects.

Challenges and Opportunities in Post-Conflict Financing

Finance is crucial to Sudan's PCR, but there are several challenges to be overcome:

- Sudan's weak institutions and massive national debt present serious challenges to mobilising adequate financing. Institutional reforms are necessary to provide transparency, accountability, and efficient use of resources;
- Measures against corruption and proper governance are necessary for proper financial resource utilisation;
- Reconstruction must balance relief needs in the short term and economic growth in the long term.

The challenge is to channel aid for recovery as well as for sustained growth without inducing dependency.

The Role of FDI

FDI can be a catalyst for Sudan's PCR, bringing in long-term capital, technology, and capacity building. FDI must be managed in a manner that prevents exploitation in harmony with Sudan's overall development goals (Loungani and Razin, 2001). Key benefits and challenges are:

- FDI is a source of long-term capital for infrastructure development and economic recovery;
- Technology transfer, development of human resources, and competitive markets are a few advantages of FDI, leading to sustainable growth and innovation;
- Appropriate regulatory plans are required to attract FDI for Sudan's development.

SUDAN'S COMPREHENSIVE PCR

Sudan's PCR strategy must be comprehensive and multifaceted to address the country's various needs. Comprehensive damage assessments will pave the way for reconstruction, prioritising the most affected sectors. Emerging technologies, such as satellite imagery, geographic information systems (GIS), and drones (Mitoulis *et al.*, 2023) will be pivotal in providing accurate information to ensure efficient use of resources, avoid misallocation, and guarantee that the priorities are addressed first.

Global Lessons and Strategies for Sudan's Reconstruction

Sudan must take lessons from Rwanda as an inspirational example of locally led reconstruction. The country was eager to construct local projects that rebuild infrastructure, foster social cohesion, and provide basic services such as water, shelter, and roads.

PCR in Bosnia, where in a concerted additional effort was applied to engage every ethnic group at the decision-making level, is also an experience that Sudan can emulate. For Sudan, the solution to building a peaceful integrated nation will lie in offering broad representation in planning and executing reconstruction processes. Delivery failures, evident in both Iraq and Afghanistan where top-down approaches ignored local needs, highlight the importance of decentralisation of decision-making. This provides higher relevance and resilience in the endeavour to rebuild, with recovery being better suited to local conditions.

Critical Infrastructure Rebuilding in Sudan

Reconstruction of critical infrastructure in Sudan is important for both economic recovery and social cohesion. The priority areas are:

- Transport infrastructure will improve trade, essential to economic recovery. Sudan must focus on restoring inter-regional connections to foster economic integration and national unity following Rwanda's PCR emphasis on transport infrastructure;
- Access to clean water and sanitation is crucial for public health and disease outbreaks, a high focus area for Bosnia's PCR;
- Rehabilitation of the energy supply is crucial in restoring Sudan's economy. Learning from Sierra Leone's PCR that adopted alternative energy sources, Sudan can use renewable energy for healthcare, education, and business activities;

- **Healthcare and Education:** At the core of Sudan's sustainable development is the rehabilitation of healthcare and education infrastructure. The rehabilitation of hospitals, clinics, and schools will provide core services to communities and help establish a qualified workforce, a key focus for all successful PCR cases.

Comprehensive Reconstruction Approach

Reconstruction of Sudan after the war should be addressed in an integrated way, including rehabilitation of the infrastructure, governance, security, and empowerment of the local population. Drawing from international best practices, Sudan can develop a recovery strategy that is inclusive, participatory, and sustainable.

DISCUSSION

The most important lesson of global PCR is to tackle the underlying inequalities that most often cause conflict. Economic and social disparities are among the primary sources of enduring instability. Sudan must focus on inclusive development, especially in regions such as Darfur, South Kordofan, and Blue Nile, where conflict and neglect have created many grievances. By addressing inequalities, Sudan can reduce the risk of future violence.

National reconciliation is extremely important; past injustices must be addressed to achieve sustainable social peace. Taking a cue from South Africa's TRC, Sudan can build an equally viable platform for national healing, accountability, and social trust-building. The rebuilding of Sudan's political institutions emphasises governance reform, accountability, and transparency. Building fair, democratic, and responsive systems of governance is vital to rebuilding public confidence in institutions (Figures 4 and 5).

Local ownership and participation are crucial for the success of PCR. Experiences in Bosnia and Rwanda indicate that reconstruction from below is more successful. In Sudan, all stages of reconstruction must engage local communities, to ensure that projects meet people's real needs and generate ownership and responsibility.



Figure 4: Pillars of PCR
Source: El-Ashmawy et al., 2024

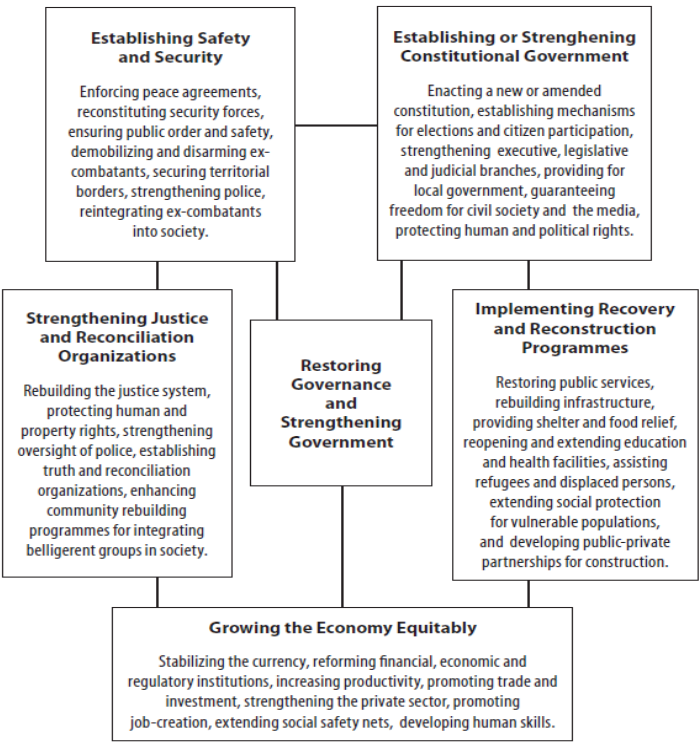


Figure 5: Governance Functions in Post-Conflict Countries
Source: Rondinelli, 2007

Economic recovery is the second important pillar of Sudan's reconstruction. Sudan needs to diversify its economy. Developing sectors such as agriculture, manufacturing, and services will contribute to the establishment of a stable and sustainable economic base. Additionally, education, job training, and credit access are required to empower women and youth. Special attention must be given to employment creation and poverty reduction to stabilise the economy and provide long-term prospects for Sudanese.

Sudan needs to strive towards the safe return and reintegration of displaced persons, providing employment, shelter, and social and psychological counselling. The experience of Lebanon in hosting millions of refugees can assist Sudan in ensuring that returnees integrate into society bringing national cohesion. Foreign assistance will be the spur for Sudan's reconstruction. Foreign assistance has to be adapted to Sudan's vision and strategy for long-term development. Effective co-ordination and open monitoring systems will ensure the effective use of external support.

CONCLUSIONS

Sudan's PCR is a very complicated task. Learning from the experiences of countries such as Rwanda, South Africa and Bosnia, Sudan can develop a strategy that balances social reconciliation, economic recovery, infrastructure reconstruction, and governance reforms. The challenge is not only the rebuilding of the physical infrastructure but also restoring the social fabric of Sudanese society. By empowering local communities, diversifying the economy, addressing deep-rooted inequalities, and promoting political reconciliation, Sudan can lay the foundations for a peaceful and prosperous future. Through an inclusive, transparent, and participatory approach, Sudan can heal the wounds of its past and emerge stronger, with all citizens working together for a shared future, irrespective of how much devastation there is (Idris, 2025).

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