TRADE & INDUSTRIAL POLICY STRATEGIES

ENHANCING INDUSTRIAL RESILIENCE IN SOUTH AFRICA

FINAL REPORT – WORK OUTPUT 3

INDUSTRIAL PARK STANDARD OPERATING PROCEDURES FOR DISASTER RISKS REDUCTION AND RESPONSE

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OVERVIEW

This document forms part of a set of outputs for the project: ***Support to Industrial Parks and Special Economic Zones for COVID pandemic prevention and response: Enhancing industrial resilience in South Africa***.

This document covers Work Output 3: The development of Special Economic Zone/Industrial Park Standard Operating Procedures for Disaster Risks Reduction and Response

Please refer to the Table below for more detail on each of the three reports.

Brief description of the three documents associated with the project

	TITLE	SHORT DESCRIPTION
Output 1	National guidelines for Industrial Parks and Special Economic Zones on COVID-19 and future pandemic resilience responses	Provide a first level contextualisation regarding the concept of resilience within the domain of industrial parks and to offer guidance on measures which need to be considered for a process of enhancing the resilience of industrial parks and special economic zones in South Africa.
Output 2	COVID-19 economic recovery plans to selected Industrial Parks and Special Economic Zones within the framework of the National Eco-Industrial Park Framework	Provides guidance on recovery measures that industrial parks and special economic zones can adopt in order to support production to pre-pandemic levels or better.
Output 3	Standards Operating Procedure on pandemic prevention/response in Industrial Parks and Special Economic Zones	Articulates disaster risk reduction and pandemic prevention response measures for industrial parks and special economic zones.

CONTENTS

KEY TERMINOLOGY

Key Term	Meaning
Disaster	A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.
Disaster Risk Management	The systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.
Disaster Risk Reduction	The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.
Hazard	A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
Mitigation	The lessening or limitation of the adverse impacts of hazards and related disasters.
Preparedness	The knowledge and capacities developed by governments, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.
Prevention	The outright avoidance of adverse impacts of hazards and related disasters.
Recovery	The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.
Resilience	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Source: United Nations. 2009. International Strategy for Disaster Reduction: Terminology on Disaster Risk Reduction. www.unisdr.org.

ABBREVIATIONS

BCP	Business Continuity Plans
DRR	Disaster Risk Reduction
IPAP	Industrial Policy Action Plan
SEZ	Special Economic Zone
SDGs	Sustainable Development Goals
SOP	Standard Operating Procedure

1. INTRODUCTION

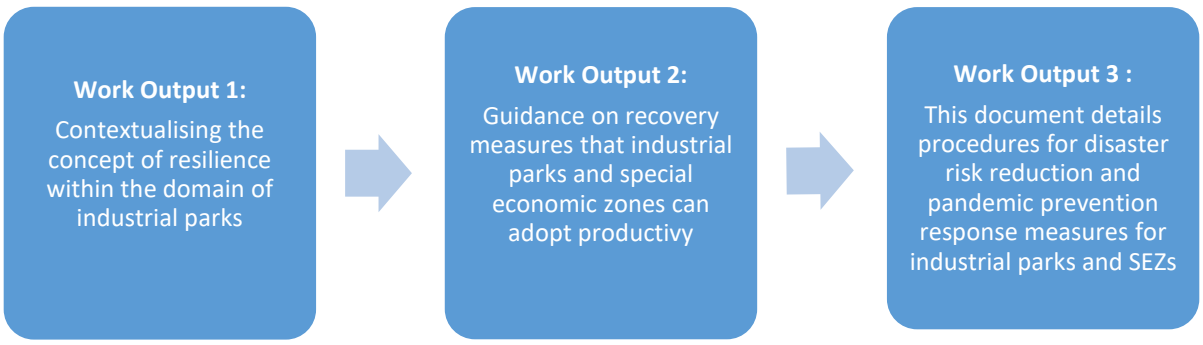
The operational environmental of industrial parks in South Africa is vulnerable to a number of risks including climate change-induced hazards, natural disasters and infectious diseases, as witnessed with the outbreak of the COVID-19. Currently there is no adequate guidance to industrial parks or special economic zones (SEZS) regarding disaster management and disaster risk reduction. To this end, clarity is needed for how industrial parks can navigate extreme events, similarly improve disaster preparedness and build resilience, while not losing sight of promoting inclusive and sustainable industrial development. (Santiago and Laplane, 2021).

Against this backdrop, this Standard Operating Procedure (SOP) for industrial parks to respond to shocks, pandemics and natural or other disasters emerges from a comprehensive study on the impact and response by industrial parks and firms to the COVID-19 pandemic. It takes into account the need to build resilient industrial parks in the face of possible future shocks including those that may emerge from climate-induced disasters or future health pandemics. The intention of this document is to provide first level guidance that will assist industrial parks and companies with their disaster risk reduction responses.

In times of uncertainty, the role for industrial parks should be to protect businesses, safeguard human and environmental health, and assist in restoring and enhancing economic and societal conditions for their tenants. This presents an opportunity impetus for industrial parks to adopt proactive industry resilience planning and actions. Notably, although implementing proactive industry resilience practices may initially result in costs, this can generate competitiveness benefits by mitigating physical damage and avoiding business interruption and financial losses over time. In view of the long-term benefits, parks and firms are therefore encouraged to consider this planning process by pre-emptively integrating measures identified in this document.

The research reports and information from Work Output 1 and Work Output 2 provided important insights on the risks, context and approaches adopted both in South African industrial parks and internationally. These lessons have informed this document, and are collated into the steps listed in the SOP below as well as the guidelines that follow. International examples of SOPs were reviewed and considered to develop this South African industrial park SOP for shocks, disaster and pandemic responses.

Figure 1: Process informing the development of the document



2. NATIONAL DISASTER RISK OUTLOOK AND IMPLICATIONS FOR INDUSTRIAL SITES

2.1. Disaster risk profile

South Africa is exposed to a wide range of natural and human-induced disasters. These include climate-induced natural disasters such as droughts, floods and wildfires; and technological disasters such as dam failures, mining-induced earthquakes and sinkholes, and spillages of hazardous waste; infectious diseases and epidemics; and lastly though less so, geological disasters such as tsunamis (IFRC, 2020).

The occurrence of disaster events in South Africa has led to significant social and economic losses, as indicated by Table 1 (World Bank, 2021). Natural disasters in the form of droughts, floods, storms and wildfires have had the most catastrophic effects. Between 1980 and 2013, droughts affected an estimated 15 million South African and within the same period floods affected over 483 000 people.

TYPES OF DISASTERS IN SOUTH AFRICA

- **Climate related disasters**
- **Human induced/Technological disasters**
- **Geological**

World Bank, 2020 and SAEON, 2021

Table 1 indicates that over the last century South Africa has experienced nine of wildfire disasters, affecting 7 380 people. There have been 22 storm-related disasters where 649 938 people were affected. According to the World Bank (2021), these natural disasters collectively incur approximately R3 billion rand (US$163.3 million) a year in damages. With a people-centred lens, the International Federation of Red Cross and Red Crescent Societies (IFRC 2020) estimates that, on average, about half a million people per annum in South Africa are affected by natural disasters at a cost of US$109 486 to the fiscus.

Table 1: Natural Disasters in South Africa, 1900–2020

Natural Hazard 1900–2020	Subtype	Events Count	Total Deaths	Total Affected	Total Damage ('000 USD)
Drought	Drought	11	0	20,925,000	2,585,000
Earthquake	Ground Movement	5	37	3,112	20,000
Epidemic	Bacterial Disease	4	323	111,960	0
	Viral Disease	1	1	0	0
Extreme Temperatures	Cold Wave	2	52	0	0
	Heat Wave	1	11	20	0
Flood	Flash Flood	6	232	9,212	123,300
	Riverine Flood	19	822	509,196	1,651,729
Landslide	Landslide	1	34	0	0
Wildfire	Forest Fire	2	30	1,600	0
	Land Fire (Brush, Bush, Pasture)	7	97	5,780	440,000
Storm	Convective Storm	20	148	148,558	1,275,041
	Tropical Storm	2	64	501,350	92,000

Source: World Bank, 2021.

Beyond social and economic losses, disaster events also severely affect critical infrastructure, disrupt delivery of basic services, and affect biodiversity health. Flash floods in South Africa have been responsible for disrupting critical infrastructure and attached services such as communication systems, delivery of potable water supply, access along selected streets and roads, power supply and sewage services. Prolonged droughts in the Eastern Cape and Western Cape provinces have resulted in a gap between demand and supply of water resources with irregular supply of water to households and businesses.

Disasters can also raise both the cost of living and doing business in an area. This is evidenced by the current review insurance companies are conducting for their policies to increase premiums for residents and business located disaster-prone areas. The consequence of this action is that it makes it possible for insurance companies and underwriters to become more expensive in the long term and could also result in limited product offerings in areas more exposed to the effects of climate-related disasters (Nyathi, 2022). As a result, people and business may look for more favourable areas to live and do business that have affordable insurance.

2.2. Implications and risks for Industrial Parks

The prevalence of disasters, particularly natural disasters, has several implications and risks for industrial parks in South Africa. This section identifies three categories for classifying effects that disasters can have on industrial parks during and after the disaster.

Macro-level risks of natural disasters to industrial parks

- **Diminished investment** in industrial parks due high propensity to natural risks from the country's increasing exposure to climate-related natural disasters is the anthesis of providing a stable and conducive environment for business. .
- **Loss of customers/inability to attract or retain customers** – manifests due to diminished investment in industrial parks as investors look for more favourable investment destinations not affected by contextual conditions.
- **Decreased competitiveness** – with country's increasing vulnerably to natural disasters, industrial parks will struggle to compete against other countries, thereby progressively losing their comparative advantage as it will become significantly riskier to do business in South Africa's industrial parks. The looming context of vulnerability to natural resource risks will outweigh all other favourable conditions for doing business in the country's industrial parks.

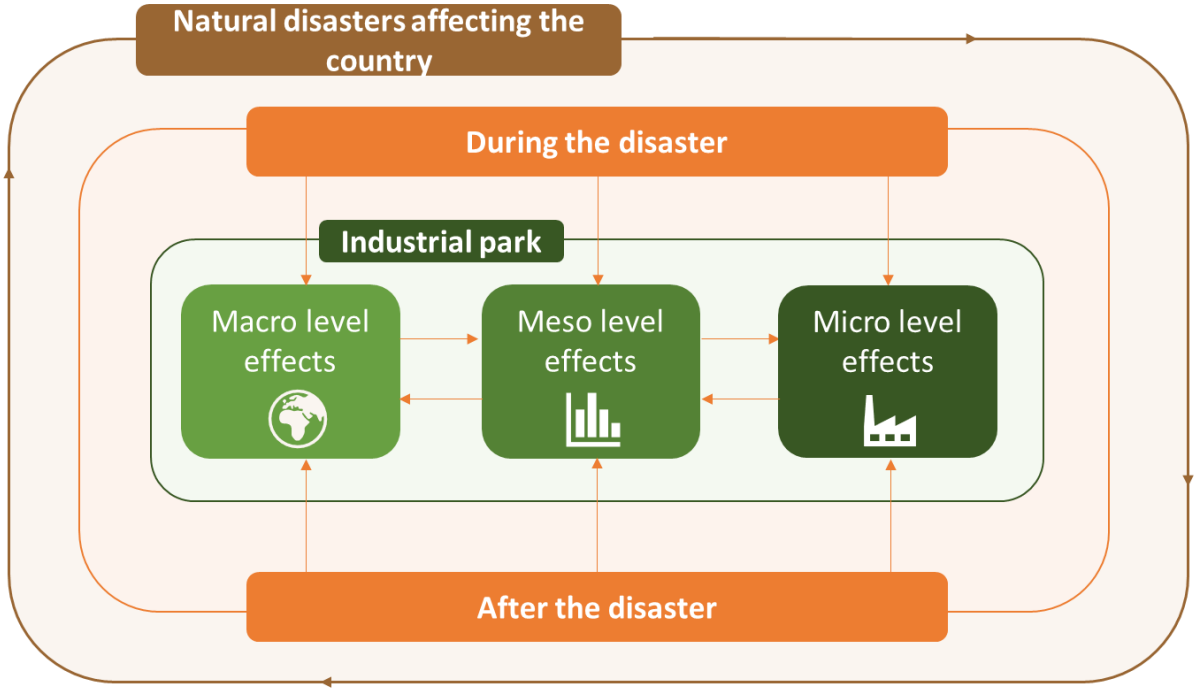
Meso-level risks of natural disasters to industrial parks

- Reduced socio-economic contributions emerging from industrial parks.
- Insufficient labour pool – people will not be encouraged to migrate or attracted to capitalise on employment opportunities in areas which are vulnerable to natural disasters.
- Park tenant level disasters can result in supply chain/global value chain disruptions due to delays and shortages of input materials.
- Reputational risks arising from limited production.

Micro-level risks of natural disasters to industrial parks

- Onsite connective infrastructure damages.
- Reduced rent income and capacity to operate zones.
- Job losses as a result of firms closing down.
- Challenges in securing financing for reconstruction and recovery.
- Closure of an industrial park, leaving behind abandoned facilities which become a haven for social problems.

Figure 2: Macro, meso and micro level risks of disasters on industrial parks



The above information has highlighted that industrial parks are not immune to contextual occurrences or disasters affecting the country. As a result, to reduce the severity of impact it is important for industrial parks to strengthen and expand response capabilities to include pre-disaster action, during disaster and post-disaster action. Such an approach enables these site to proactively and reactively address macro, meso and micro level risks of disasters to industrial parks.

3. ENABLING ENVIRONMENT

3.1. Global level

3.1.1. SENDAI Framework

The Sendai Framework for Disaster Risk Reduction 2015-2030 was globally adopted in 2015, including in South Africa. It aims to guide the multi-hazard management of disaster risk at all levels, within and across sectors, in order to realise a substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries. (UNDRR, n.d.)

The Sendai Framework of four priority areas for action:

- Priority 1: Understanding disaster risk.
- Priority 2: Strengthening disaster risk governance to manage disaster risk.
- Priority 3 Investing in disaster reduction for resilience.
- Priority 4: Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation and reconstruction.

These priority areas for action are relevant for industrial parks in South Africa as they provide an approach for sites to pursue actions which help them prepare for a disaster, respond and recover to pre-disaster levels or better. In addition, they offer insight on actions to consider to initiate disaster risk reduction in parks.

Linked to the priory actions of the Sendai Framework are 13 guiding principles and seven targets for monitoring implementation of the framework. There are two targets with significance for industrial parks in Disaster Risk Reduction (DRR);

- Target 7C *Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030,* and;
- Target 7D *Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030,*

These targets underscore the role of industrial parks to support park tenants with navigating disasters and reducing the impact disasters have on the park as well as surrounding communities. In view of these targets, the development of these SOPs have been informed by the Sendai Framework.

3.1.1. Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a complex network of 17 Goals, 169 targets and 241 indicators to track and monitor progress towards peace and prosperity for people and the planet, now and into the future. South Africa has committed to achieve the SDGs as a result it is important for all industrial parks and SEZs to become key agents for supporting delivery of the SDGs.

With regards to disaster risk reduction, there are three SDGs on which industrial parks should focus their efforts. First is SDG 13 and specifically target 13.1, strengthen resilience and adaptive capacity for climate-related hazards and natural disasters in all countries. Second is SDG 9 on resilient infrastructure which promotes inclusive and sustainable industrialisation and foster innovations. Third SDG 12, which focuses on sustainable consumption and production patterns.

3.2. National level

3.2.1. National Disaster Management Act

The National Disaster Management Act No. 57 of 2002 provides the policy landscape for preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters, and post-disaster recovery and rehabilitation. In addition, it provides direction for the establishment of disaster management centres within each sphere of government and local response measures.

Given the localised context of industrial parks and SEZs, it is important that they are informed about DRR measures and the role of the park manager at the local level.

3.2.2. Industrial Policy Action Plan (IPAP) 2019/2021

Although the IPAP has been discontinued, the 2019 iteration provided insight to the risks and disasters that are affecting industry and industrial areas. Among the catalogued risks, climate change-related and risks were accounted for. The cataloguing of these risks re-emphasises two factors: first, that industrial areas are not immune to contextual risks; and second, that it is important for industrial areas to respond accordingly to risks in order to reduce impact of disaster

3.3. Local level

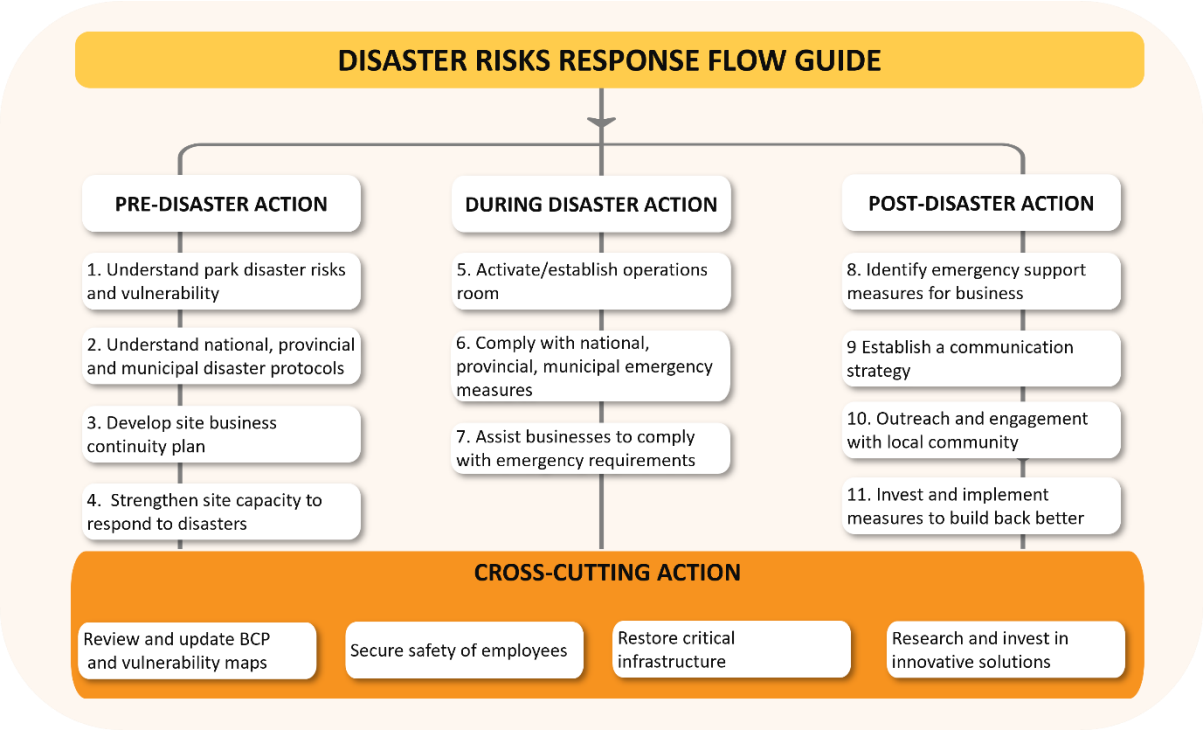
3.3.1. Municipal disaster management plan

Industrial parks exist within the municipal spatial context. As a result it is vital that they understand and are familiar with the disaster risk management plan of the municipality. In addition, parks when requested should provide input to the development of the disaster management plan of the municipality. Therefore industrial parks should have a clear idea of risks facing their operations and actions proposed for responding to risks in order to co-ordinate efforts effectively with the municipality in times of crisis.

4. GUIDING PROCEDURES FOR DISASTER RISK REDUCTION IN INDUSTRIAL PARKS

To support the preparedness, response and recovery processes of industrial parks in the event of a natural or human induced disaster, this report proposes 11 steps that industrial parks should consider. For ease of use, these steps have been categorised into three categories: Pre-disaster, During disaster and Post-disaster. Cross-cutting actions have also been identified and constitute the set of actions that need to be considered throughout.

Figure 3: Disaster risks reduction flow guide for disasters in industrial parks



4.1. Pre-Disaster Action

4.1.1. Understand the park's disaster risks and vulnerability

The first step to reducing the level of exposure to a disaster is to develop an understanding of the various risks that could potentially affect the area in which the industrial parks is located. This is important for understanding disaster risk in all its dimensions including hazard characteristics and the environment (UNDRR, n.d). To do this it is important for parks to :

- Undertake an assessment of the risks and potential disasters park is exposed to including the neighbouring community and municipality.
- Map out the park's level of vulnerability to the risks.

4.1.2. Understand national, provincial and municipal disaster management protocols and emergency requirements

Contingency plans and responses to a disaster must be in line with existing legislation. South Africa has a National Disaster Management system and legislation that covers the approach and measures to be taken. Parks should be aware of the key elements of this system in order to identify the regulatory requirements that may emerge, contact information, and support measures, among other things. The following should be noted by parks in the event of a disaster:

- A Disaster Management Centre is established in terms of Section 8 of the Disaster Management Act No. 57 of 2002. The objective of the National, Provincial or Local Disaster Centre is to promote an integrated and co-ordinated system of disaster management, with special emphasis on prevention and mitigation, by national, provincial and municipal organs of state, statutory functionaries, other roleplayers involved in disaster management and communities.
- Disaster management is an intergovernmental process, with each sphere of government playing a unique role and performing a specific set of responsibilities in the process. The Disaster Management Act makes provision for establishing Disaster Management Centres across all spheres of government.
- The legislation provides for Emergency Relief Funding at both provincial and local level. The main objective of the grant is to proactively respond to the immediate needs after a disaster to deal with its consequences. The grants are administered by the National Disaster Management Centre in consultation with National Treasury.
- The Act spells out the various requirements and limitation on how the funds can be accessed and what the funds can be used for.

Further, funds may be available for post Disaster Reconstruction and Rehabilitation. This is relevant for industrial parks that been damaged during a disaster. In the event of a disaster, industrial parks would need to identify if reconstruction or disaster funding is available, the process that will be followed, and which government departments or disaster centre the park should engage with.

4.1.3. Development of business continuity plans

Both industrial parks and businesses within those parks should have Business Continuity Plans (BCPs). If not already in place, industrial parks and businesses within the parks should develop business continuity or contingency plans for a range of different types of disaster events identified during risk assessments. The plans should cover natural disasters (e.g. flooding, drought, extreme weather events and pandemics) and man-made or technological disasters (e.g. looting/riots, community protests, loss of electricity, technological failure and transport problems).

The purpose of the BCPs is to:

- Prepare the organisational response in the event of operational disaster, disturbance, shock caused by factors beyond their control (e.g. destruction/damage caused by floods, hurricanes, fire, etc. or data loss).
- Have processes in place to restore services and or production to the widest extent possible with as little downtime as possible in a minimum time frame.
- Have contingency plans in place to ensure that disruptions are adequately accounted for addressed in an expedient way.

The objectives of the BCPs

- To minimise the likelihood and impact (risk) of interruptions.
- To serve as a guide for the recovery teams in both in the park and businesses.
- Have processes in place to ensure recovery of critical data and vital records.
- Provide procedures and resources needed to assist in recovery.
- Identify vendors and customers that must be notified in the event of a disaster.
- Identify alternate sources for supplies, resources and locations.

Actions required pre-disaster:

- A risk analysis should be done of the possible risks to be covered in the BCP.
- A risk register to be developed and maintained.
- An asset register should be in place to ensure that all company assets can be accounted for as it may need to be used for insurance claims.
- Ensure adequate insurance is in place that properly covers all assets, and is updated from time to time.
- Constitute a safety, health and environmental committee with delegated responsibility in line with Occupational Health and Safety (OHS) Act No. 85 of 1993. The OHS committee to work with or form part of the Emergency Management Team committee.
- Establish action steps for management and staff to take in the event of a disaster, and who would form part of the Emergency Management Team.
- Document and keep on file names of vendors and customers that must be notified in the event of a disaster.
- Document and keep on file names of alternate sources for supplies, resources and if necessary alternative location from which to operate.

4.1.4. Strengthen capacity to respond to disasters

Strengthening park capabilities to respond to risk is paramount for reducing impact of the risks. This process involves establishing a disaster risks reduction enabling arrangement, which includes establishing a DRR unit and capacitating individuals who have been nominated to be part of the unit.

4.2. During Disaster Action

4.2.1. Activate/establish an operations room in the industrial park

In the event of a disaster, the aim of the operations (ops) room is to track information on the status of the shock, disaster or pandemic. Information that would be relevant for the ops room includes:

- **Information on park tenants.** Besides the contact information this information would include number of employees, products made, production processes (also to determine level of risk in the event of a health pandemic), and if an essential service or not. Park management would ideally have all of this information in advance.
- **Information on the disaster**. This information would differ depending on the type of disaster, which may have a different impact on different tenants. If for example it is a health pandemic it would be important to obtain the latest information from credible sources on the disease, its transmission, health protocols, etc. As seen during COVID-19 transmission of the disease was different in different types of businesses where workers in close proximity and in cool temperatures were more at risk. A climate disaster such as floods would require information on areas affected, impact on transport networks, safety protocols, etc.

- **Economic information**. This does not need to be generated by the ops room, which can draw on publicly available information.
- **Government and private sector response measures.** This would include information on responses to the disaster and we as economic or business support measures implemented, as well as information on how to access these support measures. This could also include sector specific information and guidance.

The ops room should maintain a document repository on actions taking during the disaster as well as information on the disaster and its impact. This information would feed into other parts of the SOP, including the communication information, as well as the response and support measures.

4.2.2. Parks to implement the required national, provincial and/or municipal emergency measures

Parks should aim to ensure compliance with national or provincial disaster or pandemic requirements or regulations, and advise and support firms in the parks with their compliance measures.

During the COVID-19 pandemic, parks needed to implement health checks at the entrance, change the entrance to minimise contact, and ensure long queues and congestion were avoided. Caution needs to be exercised in implementing these measures to ensure that correct approaches are implemented and official guidance is obtained in any response measures. During COVID-19 some of the response measures initially proposed were not viable, not necessary, or may in themselves have been unsafe. Flexibility in approach is also needed.

When a disaster is declared it is necessary to do an impact assessment and situation awareness to understand the extent of the challenge, the appropriate approach measures to be taken and the resource requirements needed. Following an assessment of the impact of the disaster on the industrial parks themselves, a gap analysis needs to be carried out to identify industrial parks and tenant needs.

If, for example, in the event of a natural disaster such as flooding the impact of the disaster is on the industrial park itself, the impact should be determined and contingency measures communicated in line with the communication strategy.

4.2.3. Businesses supported to comply with emergency requirements

Navigating the disaster management bureaucracy is complex and requires a clear understanding of process, protocols, resourcing and mandates. During times of crisis this is not always clear.

Understanding the role of the park management in some of these measures is also needed. During the COVID-19 pandemic the parks played a role in issuing the essential business and workers permits, which meant that firms could continue operating.

Park management should also engage with firms in the park on approaches to implementing the necessary measures, and if firms would require assistance to implement the measures, and who would be best placed to provide such assistance.

In some instances it was noted that during the pandemic firms in the parks individually arranged private transport for the workers in the plants as there were disruptions to regular public transport due to the lockdown as well as safety issues. It was noted in Work Output 1 that a collective response was lacking and park management could have played a co-ordinating role.

Understanding the requirements and how to implement emergency measures is critical.

4.3. Post-Disaster Action

4.3.1. Assist businesses access economic and/or emergency support programmes

During the COVID-19 Pandemic, parks were able to easily access government departments in order to resolve issues and get access to information that was only available for general communication or highly congested helplines to firms outside of the parks. For example, the CEO of one of the parks was a member of the provincial Premier's COVID-19 task team and was thus able to use this access to decision-makers to sort out problems.

The aim of this step is that once the information is available on the relevant national, provincial or local government support measures as well as private sector support measures to assist business, it should be collated and shared with businesses. For example, during the COVID-19 pandemic the South African government, banks, business association and private sector funds provided a range of support measures.

The measures implemented during COVID-19 by government such as the Temporary Employee/Employer Relief Scheme (TERS) scheme, and waivers of statutory payments are outlined in Work Output 1. These measures saved many businesses and jobs during the peak of the pandemic. In addition to the business support measures, which grew over time, there were numerous social support measures as well as assistance provided by a range of private sector institutions.

Much of this information was communicated through mainstream media. However, a key role for park management could be verifying and then communicating this information to support the ongoing viability of the firms in the park.

Further, park management could play a key role in unblocking approvals, as was the case during COVID-19. For instance the parks worked to resolve issues obstructing their investors' ability to operate. In one of the parks, a firm was a supplier of a global automotive company, and their timelines for production were tightly coupled to that automotive assembly plant. The park was able to obtain approval to continue construction activity on factories even in lockdown Level 4 when the rest of the construction industry was still suspended, on the grounds of these crucial deadlines. Another intervention they were able to make was to assist firms obtain travel approval for staff from international destinations to come into the country when travel was still restricted for many citizens, in order to commission machinery and start-up production plants.

4.3.2. Communication strategy and networks

The aim of this action is to rapidly have a clear communication approach and establish communication networks with staff in the park, with the firms in the park, with relevant disaster management agencies and with neighbouring communities so that latest information can be shared. Communication lines also need to be opened with the relevant government bodies and structures, including local/ provisional and national authorities, as required.

It is important to identify stakeholders early on in the disaster that need to be prioritised in the communication, and to have flexibility as changes may take place during the course of a prolonged disaster such as a health pandemic.

A clear communication strategy is required that includes appropriate communication of contingency plans, alerting stakeholders of roles and responsibilities in a given emergency.

High-quality communication campaigns ensure that all relevant stakeholders are aware of developments and changes. Alternatively, inadequate communication may compromise the viability of firms. An example of poor communication during the COVID-19 pandemic saw firms that were

essential services not knowing they were able to return to work immediately after the “hard lockdown” and compromising their own sustainability.

High-quality communication will strengthen the ability of park management to co-ordinate with relevant governmental agencies, inter-governmental agencies, non-governmental organisations and the private sector on interventions and support.

4.3.3. Participate in national programmes and form part of disaster support initiatives and conduct community engagement

National programmes

The aim of this step is to identify if there are national programmes to overcome the disaster, shock or pandemic and if the park management or firms in the park are able to form part of/assist with response measures.

During COVID-19 there was a critical need for Personal and Protective Equipment, which included a range of health products, sanitisers and medical devices. Experience from COVID-19 showed that not all of the required products were made in the country but global supply was either oversubscribed or disrupted, meaning that if the products were not made locally they would not be available.

These requirements saw national efforts being undertaken to understand what was needed, at what quality standard, who could manufacture or supply the products, and gaps that needed to be filled in order to meet the necessary standards. Firms in industrial parks across the country during this disaster had products that could be used, or in some cases had the capabilities to manufacture products or components that were needed. They were able to develop new product ranges during this period, open up new markets as well as being part of a national response to the pandemic.

Similar requirements may emerge during a natural or other disaster. Park management through the information that is has on the firms in the park could be the first point of call for a disaster response team or could through its communication networks engage with disaster teams on what is required.

Community engagements

Outreach to neighbouring communities on the border of the industrial park areas should take place to ensure that a holistic, response driven, and human approach to development is supported. This extends beyond the daily operations of the park, and becomes critical to strengthen community engagement and resilience during times of hardship – as was seen during the COVID-19 pandemic. A working relationship with communities and regular engagements with community structures would ensure that there is familiarity with the community and the socio-economic conditions in neighbouring communities.

A notable example from one industrial park showed the value of establishing a community forum from the time they were obtaining approval to be designated as an SEZ. This structure helped to build relations of trust with the community, and could be used effectively during COVID-19. For instance, during the hard lockdown, the forum learnt of the problem of food insecurity in the surrounding community and the SEZ was able to mobilise a soup kitchen to support the community. From an initial reaction to deal with hunger, it shifted into a food security programme linking food companies and community groups in a more sustainable economy endeavour for the broader community.

Such engagements and support are crucial during times of disaster and contribute to building solidarity between the park and the neighbouring communities.

4.3.4. Invest and implement measures to build back better

The aim of this step is to implement both effective infrastructure and economic support measures in order to build back better so that the park is able to withstand future disasters, and the businesses in the park are supported to return to operating and profitability. This requires that actions are immediately taken to assess the damage (to infrastructure, operations and economic), and develop a recovery plan that first tackles the immediate rebuilding of infrastructure and the return to operations, but then also park and firm economic viability.

An evaluation process should be done after the event to assess if the responses and measures taken were in line with the SOP and the level of responses contributed to the resilience of the industrial park. Lessons learnt from the gaps and weaknesses during the disaster would require updating the BCP, the SOP and also weaknesses in physical infrastructure (where this has been impacted).

In terms of damage to physical infrastructure, if government funds be available for rebuilding after a disaster (as part of the support provided under South African government's Disaster Management Act) the necessary processes should be understood and application for funds made. Alternatively, the insurance processes would need to be complied with.

The "Build Back Better" approach should be applied in recovery, rehabilitation and reconstruction. Technical solutions exist to build more resilient infrastructure through options such as using more robust material, laying down deeper foundations, building flood protection, elevating assets or adding additional components. Such measures are costly, doubling or more the investment cost of infrastructure assets. This necessitates infrastructure owners, almost always public authorities, being extremely selective as to where they focus measures to increase infrastructure resilience. A case can be made for targeted resilience investments and that strengthening assets is cost-effective, with building more resilient infrastructure returning a higher cost-benefit ratio. (see Work Output 2)

4.4. Cross-cutting action

There are four cross-cutting areas that industrial parks need to consider, regardless of the stage of the disaster. These are:

- Reviewing and updating BCP and vulnerability maps,
- Securing the safety of employees,
- Restoring critical infrastructure, and
- Undertaking research and investing in innovative solutions.

5. CONCLUSION

Disaster Management and Disaster Risk Reduction plans of industrial parks should be dynamic and evolve. There needs to be a continual process of information gathering and keeping abreast of developments such as hazards, technologies, legislation and standards.

The development of this SOP and Guidelines come out of the engagement processes reviewing the resilience of industrial parks during the COVID-19 pandemic. These lessons provide insights on how to improve the responses in the event of future disasters.

Evaluation processes and a gap analysis on responses to a disaster are necessary, and the opportunity to assess the COVID-19 response by industrial parks during this project has yielded useful insights.

These SOPs should be workshopped with industrial park managers and other key stakeholders to refine them so that they can be adopted and implemented.

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