



**DRAFT CONSERVATION FRAMEWORK FOR THE PROPOSED WIND GARDEN & FRONTIER WIND ENERGY FACILITIES**  
**JANUARY 2021**



**WENDY MCCALLUM**  
DEVELOPMENT ECONOMIST

This conservation framework is prepared for Wind Relic by Strategic EDGE Solutions. The contents herein remain the intellectual property of Wind Relic (Pty) Ltd and may be used solely at the discretion of Wind Relic (Pty) Ltd.

This report or parts thereof may not be used and / or quoted in any context without obtaining prior permission from Wind Relic (Pty) Ltd.

**Wind Relic (Pty) Ltd**

Mr Hylton Newcombe: [hylton@windrelic.net](mailto:hylton@windrelic.net)

Mr Bill Emslie: [bill@windrelic.net](mailto:bill@windrelic.net)

**Strategic EDGE Solutions**

Ms Wendy McCallum: [wendy@strategicedge.co.za](mailto:wendy@strategicedge.co.za)

| Document version | Name           | Date            |
|------------------|----------------|-----------------|
| Draft            | Wendy McCallum | 17 January 2021 |
| Revised draft    | Wendy McCallum | 27 January 2021 |
| Revised draft    |                |                 |
| Approved         |                |                 |
| Revision 1       |                |                 |
| Revision 2       |                |                 |
| Revision 3       |                |                 |

## TABLE OF CONTENTS

|   |    |
|---|----|
| EXECUTIVE SUMMARY .....                                   | 4  |
| 1. INTRODUCTION .....                                     | 5  |
| 2. OBJECTIVES.....  | 6  |
| 3. SOCIO-ECONOMIC PROFILE.....                            | 6  |
| 3.1. Population size and structure.....                   | 7  |
| 3.2. Poverty and inequality indicators.....               | 7  |
| 3.3. Level of education .....                             | 7  |
| 3.4. Employment .....                                     | 8  |
| 3.5. Economic analysis.....                               | 8  |
| 4. COMMITMENT TO COMMUNITY ENRICHMENT .....               | 9  |
| 4.1. Contribution to skills development .....             | 9  |
| 4.2. Contribution to sustainable employment creation..... | 9  |
| 4.3. Improvement in the standard of living.....           | 10 |
| 4.4. Commitment to conservation .....                     | 10 |
| 5. CONSERVATION FRAMEWORK.....                            | 10 |
| 5.1. Theory of Change.....                                | 10 |
| 5.2. Proposed programmes .....                            | 12 |
| 5.2.1 Veterinarian support programme.....                 | 13 |
| 5.2.2 Anti-poaching support .....                         | 13 |
| 5.2.3 Conservation skills development programme.....      | 14 |
| 5.2.4 Emergency Animal Wellness Fund.....                 | 14 |
| 5.3. Resources.....                                       | 14 |
| References.....   | 16 |

### List of Figures

|  |    |
|--|----|
| Figure 1: Commitment to Community Enrichment Principles..... | 9  |
| Figure 2: Conservation Framework Theory of Change .....      | 11 |
| Figure 3: Conservation Framework Programmes .....            | 13 |

## EXECUTIVE SUMMARY

The conservation framework in respect of the proposed Wind Garden and Fronteer Wind Energy Facilities; proposed developments to be located within Makana Municipality in the Eastern Cape. This framework is prepared within the context of the proposed projects' commitment to socio-economic development and is an initial draft with which stakeholders are invited to engaged and provide input into.

The framework seeks to achieve key social objectives of increasing the level and diversify the type of skills in communities required to support conscious conservation and creation of sustainable employment opportunities for the local community which results in a sustainable increase in household income. Key conservation objectives include preservation of pristine natural assets abounding in Makana Municipality for the purpose both of conservation and the promotion of eco-tourism protection of natural assets that are indigenous and endangered, for the purpose of preserving these assets for future generations.

There is a relatively youthful population in Makana Municipality that likely is attributable to the many educational institutions located within the municipality. These youth, for the most part, do not meaningfully contribute to the economy, as they are furthering their education, and the majority leave the municipal area upon completion of secondary or tertiary education. More than 90% of the portion of the population that permanently reside in the municipality do not have any further education beyond a National Senior Certificate – a crying shame given the quantity and quality of education institutions located in the municipality. Lack of education and skills is coupled with a high unemployment rate of about 30%; which is probably higher given the current COVID-19 context and a high dependency on social grants. Income inequality is high.

In addition to the education sector, key economic sectors are finance and retail, the latter of which is inextricably linked to a key cultural and eco-tourism sector. The tourism sector has been particularly hard hit during COVID-19 and measures to stimulate, support and grow this sector must be considered.

It is within this context that the Wind Garden and Fronteer Wind Energy Facilities commit to the enrichment of communities; socially, economically and ecologically. Key principles that guide socio-economic commitments include contribution to skills development, sustainable employment creation, improved standards of living for communities and commitment to conservation. These principles, together with a Theory of Change that seeks to achieve the social and conservation, provide the basis for the identification of specific complementary and interrelated programmes that together comprise

the conservation framework. These programmes include a veterinarian support programme, a conservation skills development programme, support to anti-poaching programmes and an emergency animal wellness fund.

The manner in which these programmes will be resourced may comprise contributions that are made to recipients (game farms, academic institutions, etc.) for immediate activities coupled with that a portion of funding available for Socio-Economic Development that is to be invested in a fixed-income investment fund which will generate an annuity income that may fund activities in perpetuity.

## 1. INTRODUCTION

This conservation framework is prepared within the context of the Socio-Economic Development Plan for the proposed Wind Garden and Fronteer Wind Energy Facilities which are to be located between Makhanda (formerly Grahamstown) and Riebeek East in the Makana Municipality in the Eastern Cape. For the purposes of this document, Wind Garden and Fronteer Wind Energy Facilities are collectively referred to as the Wind Energy Facilities or WEF. The immediate vicinity surrounding the proposed Wind Energy Facilities includes the main settlements of Makhanda (formerly Grahamstown) and Riebeek East and protected areas. For the purpose of this framework, “immediate vicinity” is defined as the area that falls into the viewshed of the facility.

This draft conservation framework is prepared for the purpose of engagement with to stakeholders, so as to elicit meaningful input from stakeholders with the view of strengthening the framework based on relevant feedback.

As required by the National Energy Regulator of South Africa in relation to an Application for an Electricity Generation Licence in terms of the Electricity Generation Act (No. 4 of 2006), the applicant is required to demonstrate certain commitments to empowerment and economic development.

Economic development refers to increasing wealth and improving the well-being of communities. It is increasingly recognised that sustainable socio-economic development and conservation are interdependent. A recent study published by The Nature Conservancy (2020) states that “[m]any assume that economic interests and environmental interests are in conflict. But new research makes the case that this perception of development vs. conservation is not just unnecessary but actively counterproductive to both ends. Achieving a sustainable future will be dependent on our ability to secure both thriving human communities and abundant and healthy natural ecosystems.” Thus, socio-economic interventions should include conservation-related interventions that dually seek to increase the wealth and improve the well-being of communities and ensure and extend conservation efforts in

the region; the latter of which for the purpose both of conservation in broad terms and the promotion of eco-tourism in the region.

This report provides a brief overview of the socio-economic situation of Makana Municipality, in which the proposed WEF are to be developed, and proposed envisaged enrichments that the WEF will bring to the communities of Makana Municipality. Social, economic and ecological needs are considered and collectively form the foundation for the development of a Theory of Change framework in which potential initiatives that encompass conscious conservation are identified.

## 2. OBJECTIVES

The overarching vision of the Sustainable Development Goals, which is “a world where all people are fed, healthy, employed, educated, empowered and thriving, but not at the expense of other life on Earth.” (United Nations, 2021). It is this vision that guides this conservation framework, which is premised upon achieving the dual objectives of socio-economic upliftment for communities and conscious conservation in areas located within a relatively close proximity to the proposed Wind Energy Facility.

In terms of socio-economic development, specific objectives include:

- Increase in the level and diversify the type of skills in communities required to support conscious conservation; and
- Creation of sustainable employment opportunities for the local community which results in a sustainable increase in household income.

In terms of conservation, specific objectives include:

- Preservation of pristine natural assets abounding in Makana Municipality for the purpose both of conservation and the promotion of eco-tourism; and
- Protection of natural assets that are indigenous and endangered, for the purpose of preserving these assets for future generations.

## 3. SOCIO-ECONOMIC PROFILE

The Makana Municipality is a local municipality located in the western part of the Eastern Cape Province. It is one of seven local municipalities within the Sarah Baartman District Municipality. The Municipality is semi-rural, with an estimated total population of 81,680 in 2017, with the largest concentration of the population located in Makhanda (formerly Grahamstown). The main settlements in the municipality are Makhanda, Alicedale and Riebeek East.

Makhanda is one of the leading cultural, educational and tourism centres in the region and hosts the National Arts Festival in South Africa, as well as being the primary location of the Rhodes University and other prominent and internationally acclaimed primary and high schools and colleges.

### **3.1. Population size and structure**

It is estimated that the population of the Makana Municipality is 81,680 (2017) at an average annual growth rate of an estimated 1,3%. Makana Municipality accounts for about 18% of the population of Sarah Baartman District Municipality.

69,7% of the population of Makana are classified as Economically Active; those between the ages of 15 and 64 years old. Makana Municipality hosts a range of education facilities including Rhodes University, which attracts people within the working age group, but who are not necessarily generating an income as they are engaged in further education and training. The implication of a relatively youthful population places pressures on the need to create future sustainable employment opportunities, so as to retain skills developed in the region.

23,7% of the population are classified as youth, i.e. younger than 15 years old. It can be recommended that growth and development are accelerated in the region to ensure suitable opportunities, particularly for young, skilled individuals so as to ensure the region retains its skilled workers and to ensure increased circulation of income in the regional economy, earned by skilled individuals.

### **3.2. Poverty and inequality indicators**

The Gini Coefficient, a measure of income inequality, is calculated on a scale from 0 to 1, i.e. 0 being a perfectly equal society and 1 representing a perfectly unequal society. The Gini Coefficient for income (including social grants) for the Makana Municipality is 0,63 (2014) indicating that there is still a high income inequality in the region. Education and skill development are paramount to address inequalities, as many residents are either unemployable or unskilled.

About 15,2% of the population receive social grants. It is likely that the dependency rate on social grants is higher than reported, as a general rule of thumb in the Eastern Cape is that one income supports between 6 and 8 people.

### **3.3. Level of education**

In terms of education, 8,2% of the population received no schooling, whilst 20,8% received some primary schooling and a further 15% of the population attaining matric. Only 7,3% of the population

above the age of 20 years received a higher education, despite the existence of Rhodes University and prestigious private schools.

### 3.4. Employment

26,137 or 32% of the Economically Active Population are unemployed. It is likely that the impact of COVID-19 and related lockdowns have worsened this situation.

The sectors that account for the greatest proportion of employment in Makana are wholesale (23,2%), community services (20,9%) and general government (16,5%). According to the Makana Municipality IDP (2017 – 2022), Rhodes University, which provides educational services, is responsible for approximately 71% of the government sector's output in Makana, and approximately 21% of the sectors permanent employment.

### 3.5. Economic analysis

Gross value added (GVA) at basic prices is commonly used as a regional measure of production. The total RGVA for the Makana Municipality in 2017 is approximately R5 billion. The greatest contributors to the regional economy are general government (25,2%), which includes Rhodes University, wholesale and retail (19,6%) and finance (18,6%).

The economy of Makana Municipality has increased by an average of 1,3% per annum over the past ten years. This is largely owing to manufacturing, brick-making and aquaculture in particular, transport services, construction and finance. It should be noted that there has been no growth in the agriculture and hunting sector over the past ten years.

There has been a notable decline in the proportion of employment in the agriculture and hunting sector. In terms of agriculture, 78% of commercial farmers generate their income from livestock farming and animal products, predominantly dairy farming. However, water shortage and inadequate infrastructure are the dominant challenges faced by commercial farmers and game reserves alike.

In terms of the Eastern Cape Provincial Spatial Economic Development Strategy (PSEDS), the following sectors will stimulate growth of the province and address issues of poverty and unemployment, and should be considered in terms of any social or economic plan:

- Agriculture
- Industry, including heavy and light industry and manufacturing
- Tourism, both domestic and foreign tourism, with a particular emphasis on cultural tourism and eco-tourism



- Service sector, including financial, social, transport and retail government

## 4. COMMITMENT TO COMMUNITY ENRICHMENT

Wind Energy Facilities, like any development, provide for an opportunity to enrich the communities in which the WEF are to be located. This section of the report considers selected socio-economic and conservation-related enrichment principles that guide the conceptualisation of the proposed conservation framework. The principles are diagrammatically presented in Figure 1.

Figure 1: Commitment to Community Enrichment Principles



### 4.1. Contribution to skills development

During both the construction and operations phases of the proposed development there is a commitment to skills development related to the construction and operation phases of the proposed development. A key community enrichment principle is that of broadening skills development opportunities to beyond Wind Energy Facility-related, thus increasing the positive impact on communities of the proposed development. The non-wind energy skills to be developed should be relevant and required in the region and should seek to provide value to the community and the environment.

### 4.2. Contribution to sustainable employment creation

A key positive impact during the operations phase of the proposed development is the creation of sustainable employment positions. As previously recommended, employment creation coupled with

skills development initiatives unrelated to the development should be undertaken to extend this positive impact beyond employment creation directly related to the WEF.

### **4.3. Improvement in the standard of living**

During the construction phase of the proposed development there will be, by virtue of temporary employment created, an improvement to the standard of living of the households from which temporary labour originates. This benefit is terminated at the end of the construction phase of the project. It is necessary to consider a more sustainable positive impact related to improvement in the standard of living in communities. To this end, skills development coupled with sustainable employment creation may extend this positive impact beyond the construction phase of the proposed development, thereby sustaining the positive impact of the Wind Energy Facility.

### **4.4. Commitment to conservation**

Any major development to be located in a relatively rural area that includes several protected areas may result in a change in the perception of communities and tourists of the area. This largely is subjective, and thus perceptions may be positive or negative. In the case of international tourists, studies have shown that for the most part international tourists support the development of wind farms and are more used to seeing wind farms than local tourists. This is important to note given that the target market for many private game reserves is international tourists, albeit that the situation is very different now in the context of COVID-19 and related restrictions to travel.

Thus, it is critical that as much as possible is done to ensure that the area in which the development is undertaken is consciously conserved, preferably by the community, and that resources necessary to enact this conservation are committed. An intervention dedicated to conservation, so as to ensure that the natural assets of the region are protected and conserved, should be considered and committed to. There are various programmes that may be considered that cumulatively would make a marked difference in terms of conservation of the region generally, and protected areas specifically.

## **5. CONSERVATION FRAMEWORK**

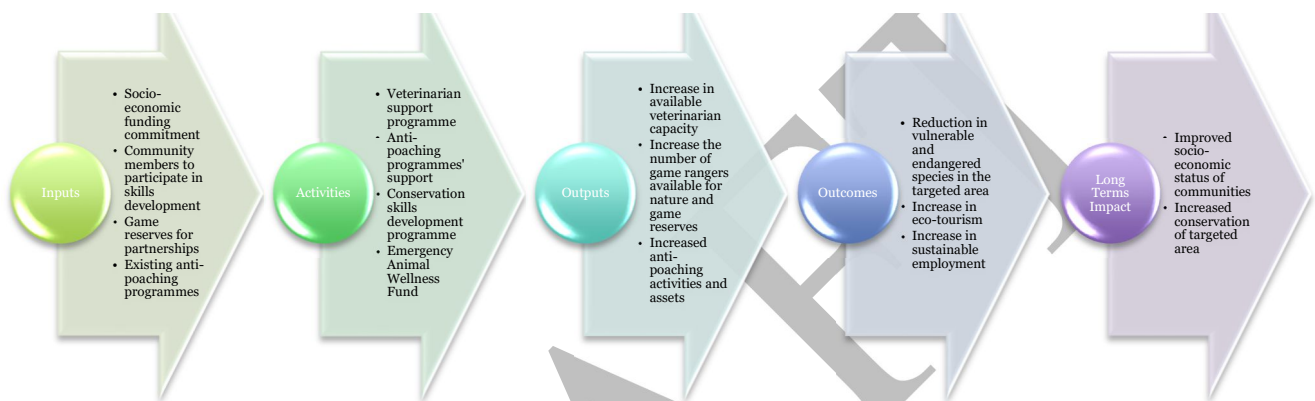
### **5.1. Theory of Change**

The conservation framework is based on the Theory of Change framework. Theory of Change was selected as the most appropriate framework, as it defines the intended long-term impact or change that a programme is anticipated to bring about and describes how this change is expected to be realised, within the context in which the programme is to be implemented. Essentially, the Theory of Change focusses on what has been described as the “missing middle”, i.e. what a programme does

(i.e. activities) and how these result in the intended change (i.e. outcomes and impact). This is achieved by first defining the intended long-term impact of the programme and then works backwards to determine the inputs and outputs necessary to achieve programme outcomes, which will result in long-term impacts or change.

The Theory of Change for the conservation framework is presented in Figure 8.

Figure 2: Conservation Framework Theory of Change



The conservation framework Theory of Change defines the long term impact of the framework as improved socio-economic situation of communities coupled with increased conservation of the targeted areas. Targeted areas are defined as protected areas within the immediate vicinity of the proposed development.

The outcomes of the framework, necessary to result in change (or the long-term impact) are an increase in eco-tourism, a related increase in sustainable employment and a reduction in the percentage of vulnerable and endangered species in the targeted area. In terms of the latter, the Makana Municipality IDP notes that there 62% of flora and fauna species are cited as being vulnerable and 32% are cited as being endangered. This requires a coordinated effort to reverse these trends. In addition, large tracts of land within Makana Municipality are classified as “Critical Biodiversity Areas”; similarly this requires a coordinated effort to preserve the biodiversity of the region. Improved conservation in the region will result in protected biodiversity and natural assets, which will attract more tourists into the region. An increase in tourism will result in an increase in employment opportunities, both directly and indirectly and thus the social and environmental outcomes are interrelated.

Based on the outcomes of the framework, the outputs of the framework may be defined. The outputs of a programme, upon which the success of the interventions are to be measured and necessary to achieve the outcomes, are as follows:

- Increase in available veterinarian capacity: This refers to specialist veterinarian services focusing on stock and game. This is necessary to better support farms and game farms in the targeted area.
- Increase the number of game rangers available for nature and game reserves: This is necessary to better support conservation efforts, by upskilling local community members who also may share their newly acquired skills within the communities in which they reside and to ensure that there are sufficient skilled community members that may be employed by game reserves in the region.
- Increased anti-poaching activities and assets: Poaching continues to plague protected areas, as animal parts are traded as commodities. In order to combat this scourge, additional resources are required to supplement already well-oiled operations. Thus, this output seeks to support already existing initiatives through skills development and / or equipment.

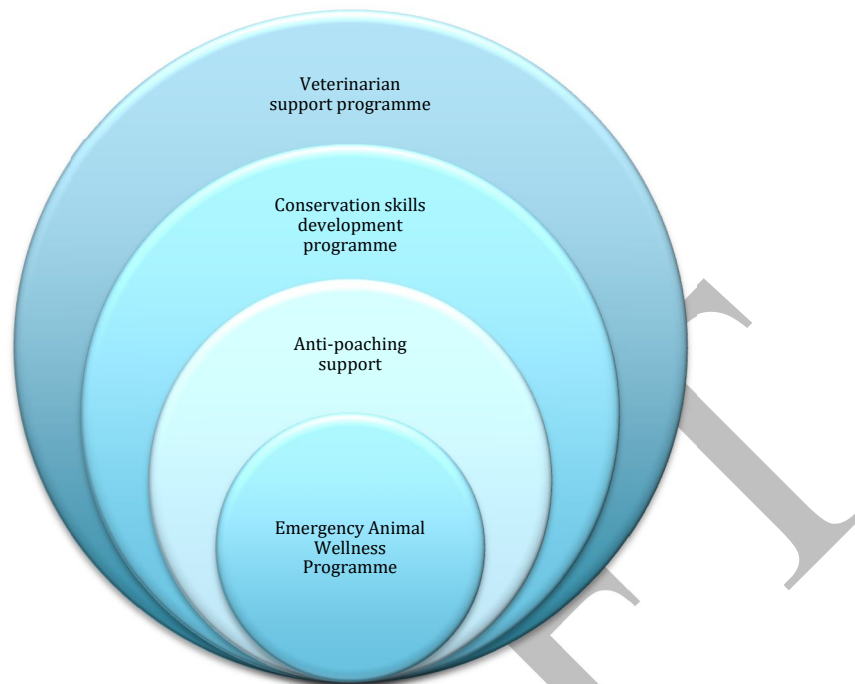
Key activities include a veterinarian support programme, an anti-poaching programmes' support, conservation skills development programme and an emergency animal wellness fund. Each activity is further outlined in subsequent sections.

The success of these initiatives is not dependent solely on the Socio-Economic Development contributions that are pledged, but rather is contingent on a combination of inputs including financial resources, partnerships with game reserves and the availability and willingness of community members to engage in and benefit from the programmes.

## 5.2. Proposed programmes

Four core programmes have been identified based on the community enrichment principles and the Theory of Change. These programmes are diagrammatically presented in Figure 3 and are briefly outlined in subsequent sections.

Figure 3: Conservation Framework Programmes



### 5.2.1 Veterinarian support programme

The purpose of this programme is to strengthen and expand the current capacity of available veterinarians available specifically to farms and game farms in the area. It is understood that currently there is limited capacity located in Makana Municipality. Thus, this programme seeks to support current veterinarian capacity through funding of interns and / or the establishment of an additional veterinarian practice located in Makana Municipality.

It is intended that the internship capacity component of the programme be supported through the provision of bursaries for community members to study veterinary science. It is proposed that deserving learners from quintile 1, 2 or 3 high schools in Makana Municipality be identified and invited to apply for the bursary. A condition of the bursary would be interning at the current or proposed new veterinary practice in Makana Municipality during academic recess and a commitment to working in the practice for at least five years following conclusion of their degree.

### 5.2.2 Anti-poaching support

Several anti-poaching programmes have been established for the purpose of combatting poaching, with varied success. Challenges relate to the vast areas to cover and limited human and other resources to cover these areas. Thus, it is proposed that additional support be provided to such

programmes to fund either additional person power or to procure additional vehicles and / or equipment that may be required to increase anti-poaching efforts.

As far as possible, additional human resources should be sought from community members that will receive skills development training in respect of game ranging, as described below.

### **5.2.3 Conservation skills development programme**

It is recommended that accredited conservation skills development be supported, specifically for the purpose of developing field guides and game rangers. This will increase the pool of skilled community members that may be able to provide skilled employment at game reserves.

Such successful skills development programmes already exist and therefore it is recommended that additional support be provided to these programme, on condition that any funding provided benefits members from the local community.

This programme will require partnerships with game reserves, as community members that complete their skills training will require employment. It is possible that the Socio-Economic Development funding may co-fund the first two years of employment.

### **5.2.4 Emergency Animal Wellness Fund**

COVID-19 has wreaked havoc on international travel and as a result, there have been virtually no international tourists entering South Africa for the better part of 2020. This has been particularly difficult for game reserves that largely depend on international tourists for their bread and butter. While revenue has rapidly and significantly reduced, there are certain unavoidable operational expenditures that must continue. Some expenses relate to the well-being of animals. Animals, owing to compounding drought conditions, may be struggling to find sufficient sources of nutrition and / or may require medical attention from time to time. It is understood that funding for such requirements is necessary, but limited given the current climate.

To this end, it is proposed that an immediate activity is the establishment of an emergency animal wellness fund. Game farmers may apply for this funding and applications will be assessed on merit and need. It is suggested that funding provided should be repayable, over a five year period, at 0% interest. All funds repaid will be recycled to fund further Socio-Economic Development commitments.

## **5.3. Resources**

The manner in which these programmes will be resourced may comprise a two-pronged approach. The first prong is contributions that are made to recipients (game farms, academic institutions, etc.)

for immediate activities. The second prong is that a portion of funding available for Socio-Economic Development be invested in a cautious fixed-income investment fund (preferably a green bond, as traded on the Johannesburg Stock Exchange). This investment will fund an annuity income that may fund activities in perpetuity.

DRAFT

## References

Makana Municipality Integrated Development Plan 2017 – 2022. <http://www.makana.gov.za/wp-content/uploads/2013/06/Final-IDP-2019-20-updated.pdf>

The Nature Conservancy. (2020). *The Science of Sustainability: Exploring a Unified Path for Development and Conservation*. [https://www.nature.org/content/dam/tnc/nature/en/documents/TNC\\_TheScienceOfSustainability\\_04.pdf](https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_TheScienceOfSustainability_04.pdf)

United Nations. (2021). <https://sdgs.un.org/goals>

DRAFT