

Project Name	Feasibility study into infrastructure development for the purposes of intensive agricultural production in semi-arid environments.
Region	Pilbara
Location	Karratha
Proponent	City of Karratha/Pilbara Development Commission

Detailed Funding Requirement:

Total budget \$150,000
 Total Royalties for Regions/PDC Economic Development Fund \$100,000
 Total Non-Royalties for Regions/City of Karratha funding \$50,000

CASH (\$'000)	Year 1
RfR/PDC Economic Development Fund	100,000
Non-RfR/City of Karratha Funding	50,000
Total	150,000

High level Project Description/summary:

Recent inroads into horticultural technology have resulted in successful trials of intensive, ecologically sustainable agriculture in arid and semi-arid environments. These trials (based on the use of salt water cooled greenhouses) have successfully produced high volumes of crops using renewable energy, minimal water for irrigation and the sequestering of carbon dioxide from neighbouring industry in the growing process.

The City of Karratha, due to its coastal proximity, semi-arid environment and availability of industrial infrastructure was identified as a location which could readily facilitate this type of intensive agriculture. The City in conjunction with the Pilbara Development Commission (PDC), Sahara Forest Project (SFP) and Yara Pilbara seek funding to determine the feasibility of intensive agriculture production in the region using this technology. To determine feasibility a number of area specific studies will be undertaken. These include site identification, commercial viability, ecosystem and environmental impact studies, social impact studies and public information/outreach programs.

The project works towards the achievement of a number of the core objectives within the City of Karratha's Strategic Community Plan. The Strategic Community Plan is a document that guides operational duties of Council until 2022. An intensive agricultural project of this nature would help achieve the following outcomes within the Strategic Community Plan.

OUR OUTCOMES		OUR RESPONSE	
2.a	Create opportunities for growth and diversification of the local economy	2.a.1	Develop initiatives, build partnerships and deliver projects to attract and support Small to Medium Enterprises in the region
3.a	An environmentally responsible and sustainable organisation	3.a.1	Protect and enhance the natural environment, open spaces, beaches and waterways
3.b	A sustainable and thriving natural environment	3.b.1	Explore options to reduce, reuse or recycle our waste and minimize our carbon footprint
4.e	Partnerships with Regional and State agencies	4.e.1	Advocate on behalf of the community at local and regional level through exhibiting effective civic leadership

Figure One: City of Karratha Strategic Community Plan Outcomes and Responses

Additionally, agriculture has been identified in the PDC's Pilbara Regional Investment Blueprint as a transformational opportunity for the continued growth and economic diversification of the Pilbara. The Blueprint's vision builds on the success of the State Government's Pilbara Cities initiative to build the population of Karratha and Port Hedland into liveable cities of 50,000 people, and Newman to 15,000 by 2035, with other Pilbara towns growing into more attractive and sustainable local communities.

Project Outcomes/Benefits and methodology:

Feasibility Study

The focus of the study is to consider opportunities within the region for intensive irrigated agriculture however the learnings from work to be undertaken will support other business options and support a wide variety of industries and purposes.

- Preliminary site identification suitable for intensive agriculture based on triple bottom line principles and in light of agricultural site needs (such as; large land area, access to salt water, 200m above sea level elevation, proximity to industry).
- Report detailing ecological impacts and the local ecosystems capacity to accommodate industry and agriculture.
- Report on social impacts of agricultural projects including the potential job creation, opportunities for training and education and subsidiary industries that may arise.
- Communication plan and results of initial community engagement.

Inception of an Intensive Agricultural Project in Karratha (indirect outcome of this study)

- Greater industry diversification in the municipality.
- Increase in permanent resident population.
- Increase in the size of the regional economy as measured by gross regional product.
- Increase and diversification of human capability and capacity of residents and/or workers within in the region.
- Additional economic infrastructure.

Successful funding of the application will see the completion of the feasibility study. A project brief will be composed for each component of the feasibility study and a competitive tendering process will be entered into to appoint a consultant with the relevant skills and experience to undertake the investigations.

Expected benefit-cost ratio

The eventual implementation of an intensive agricultural project of this nature is expected to provide in excess of 20 direct jobs. This includes skilled manual labour, research and development, management and engineering positions. A facility of this type could also act as a centre for training and innovation which will provide upskilling and capacity building for future employment opportunities.

The use of economic profiling software indicated that should 20 agricultural related jobs be created an estimated \$10million would be added to the economy with \$1.8 million in salaries and an addition of 18 indirect local jobs.

Describe the engagement with key stakeholder groups (including relevant State Government Agencies and Regional Development Commission/s) completed to date and the proposed engagement plan.

Stakeholder engagement to date includes face to face meetings with the Department of Agriculture and Food (DAFWA), Department of Regional Development (DRD), Pilbara Development Commission (PDC), relevant members of parliament and local industry.

Engagement that will be undertaken as part of the feasibility study will include a public outreach program utilising social media, print media, radio outlets and community workshops. Community workshops will be targeted to those most directly influenced by the eventual outcomes of the project including industry and local businesses. Additionally, academic organisations and the CSRIO will be informed in regards to the research and development potential.

Please detail the proposed secondary benefits of the project. Please describe any plans to engage local businesses as part of the project phase or upskill local people.

Reports arising from the feasibility study will provide valuable learnings and a retained bank of knowledge that can be utilised for numerous projects across various industry sectors. The aim is for the knowledge from the study to be publically available and accessible by government and non-government agencies. In the Post feasibility stage, the development and use of the technology will lead to innovative growing practices that can be showcased to the wider community. It is likely that the constructed facility in Karratha could be developed as a research, development and training centre. This will advance the use of sustainable food growing practices and lead to further creation of jobs through upskilling.

The infrastructure for this type of project would also create large amounts of solar energy which could be utilised off site by other industries or as an additional commercial enterprise (feeding into the grid). Additionally, the use of saltwater infrastructure provides synergies with mariculture, halophyte cultivation and algae production that could be promoted as additional industry and employment opportunities.

Please describe the project development methodology, governance and implementation plan for the project.

Currently a business development assessment is being undertaken by Sahara Forest Project in partnership with Yara Pilbara to determine the inherent risks associated in developing a project of this nature in the region.

Should this risk assessment indicate that the project will not be commercially viable, further studies will not be undertaken. This will thereby mitigate some of the exposure to the City and the PDC's financial contributions.

The overall feasibility study will encompass a number of stages and the responsibility for the various components within the study will be dependant on the core scope of works of each organisation. The City of Karratha has an overarching objective to see the region promoted as a viable community, one that is not wholly dependant on the mining sector. In light of this, the City will most likely take responsibility for the promotion of new industry to the wider community through the communication package. Additionally, a generic social impact assessment detailing effects additional industry will have on the local community could be applied to future economic development projects and as such should be funded by the City.

The Pilbara Development Commission and the City of Karratha have had extensive experience in the engagement of consultants to undertake studies aimed at providing context for infrastructure development. City procurement processes are well developed ensuring rigorous assessment of consultant credentials and experience in undertaking similar studies.

The project timeframe will be finite and easily achievable given resources available to both organisations (income, staffing availability).



How will any ongoing funding requirements of the project be funded?

N/A