



Global Emissions – Sustainable Alternative Fuels

Pilot Facility – Integrated Seawater Energy and Agriculture System

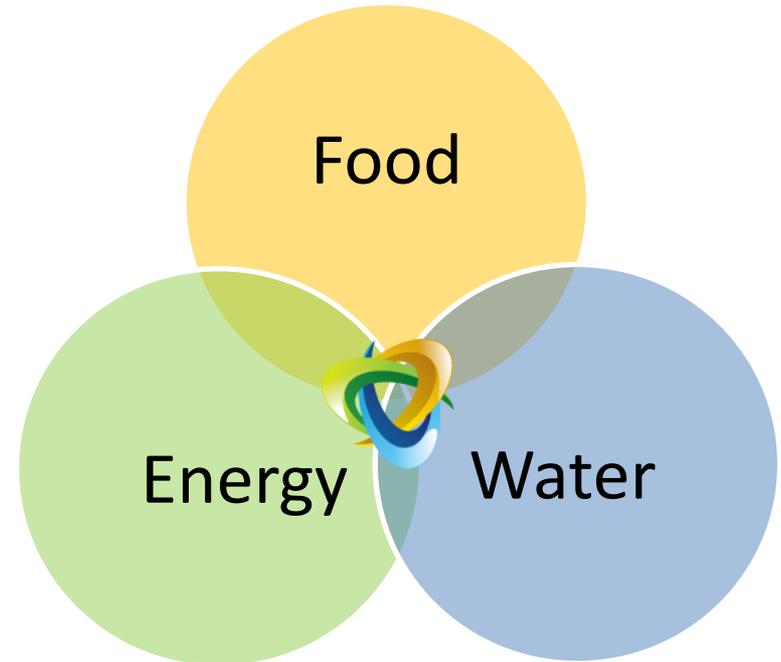
ICAO INTERNATIONAL AVIATION AND ENVIRONMENT SEMINAR

March 2015





- Biomass research
- Biomass supply chain
 - Cost-effective
 - Scalable
 - Sustainable
- Food – Water – Energy nexus

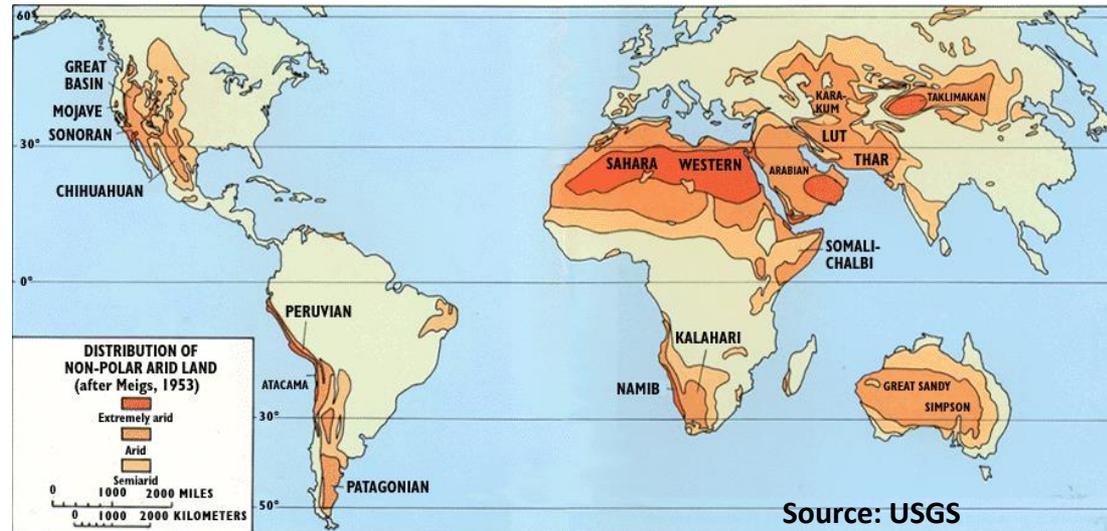


Our concept for bioenergy production could be applied to the UAE and many other arid regions of the world

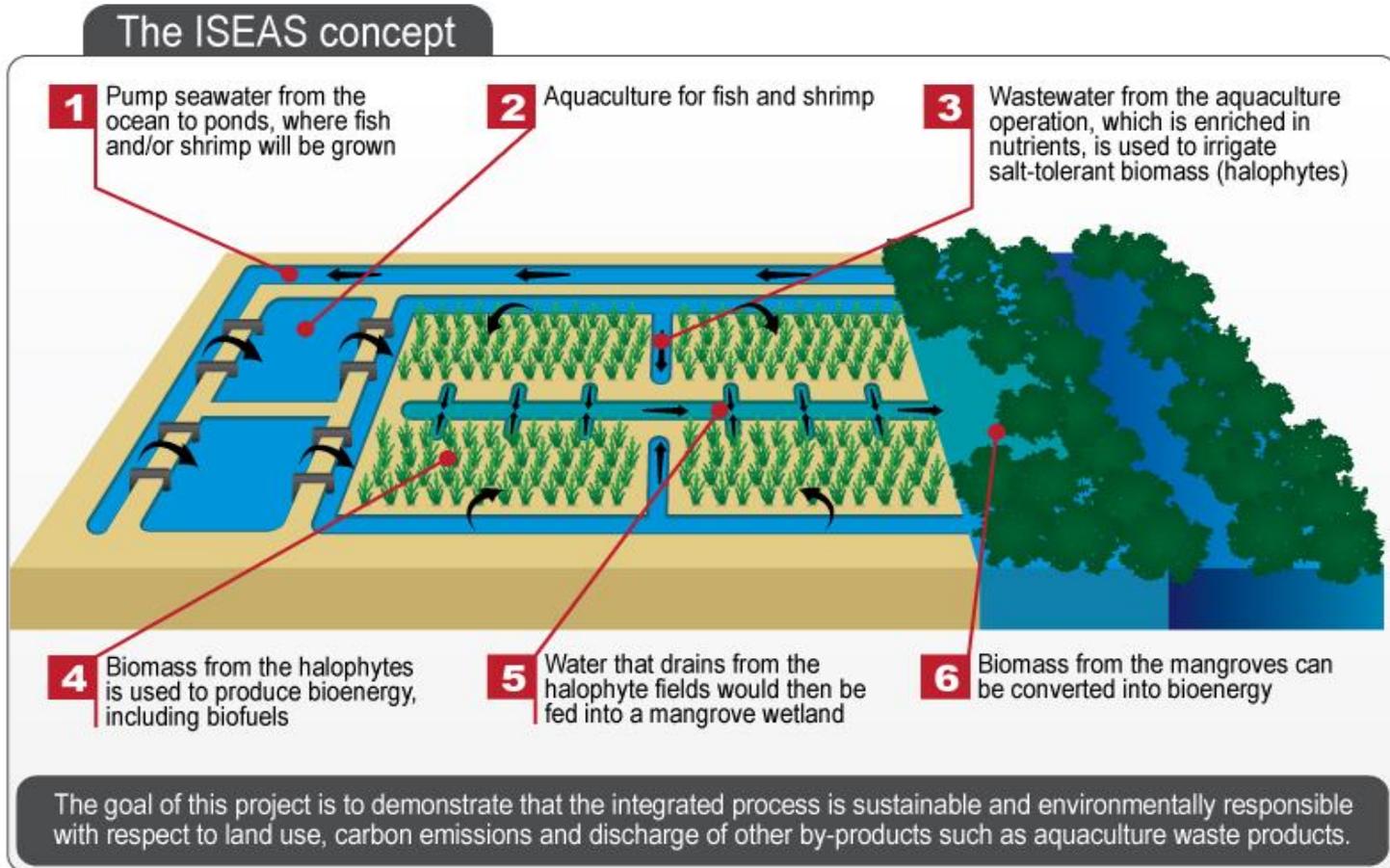
97%
of the Earth's water is in the
oceans



About 20%
of the Earth's land mass is desert
~25.5 million km²



The flagship project of the SBRC is the Integrated Seawater Energy and Agriculture System



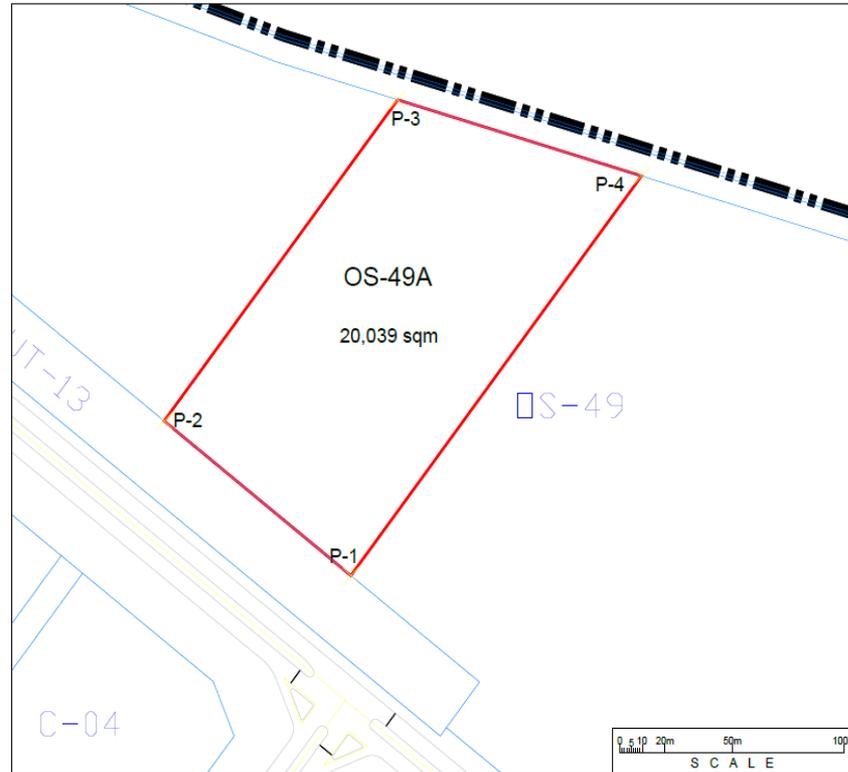
PROJECT LOCATION



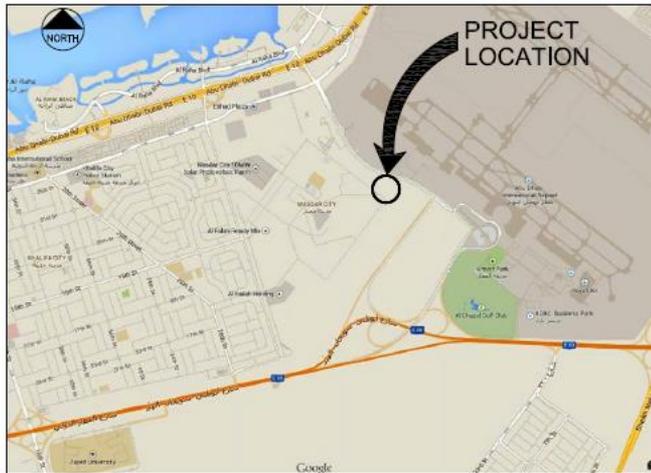
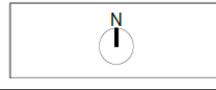
LOCATION MAP
NTS

PLOT OS-49A COORDINATES		
	X	Y
P1	259602.5888	2703880.0847
P2	259519.4362	2704044.6102
P3	259623.4592	2704178.6590
	1.8677	

Plot Coordinates Plan



ADM Sector: SE45
ADM Plot: C52
ADM Municipality-Ref: 022-166-000-C52



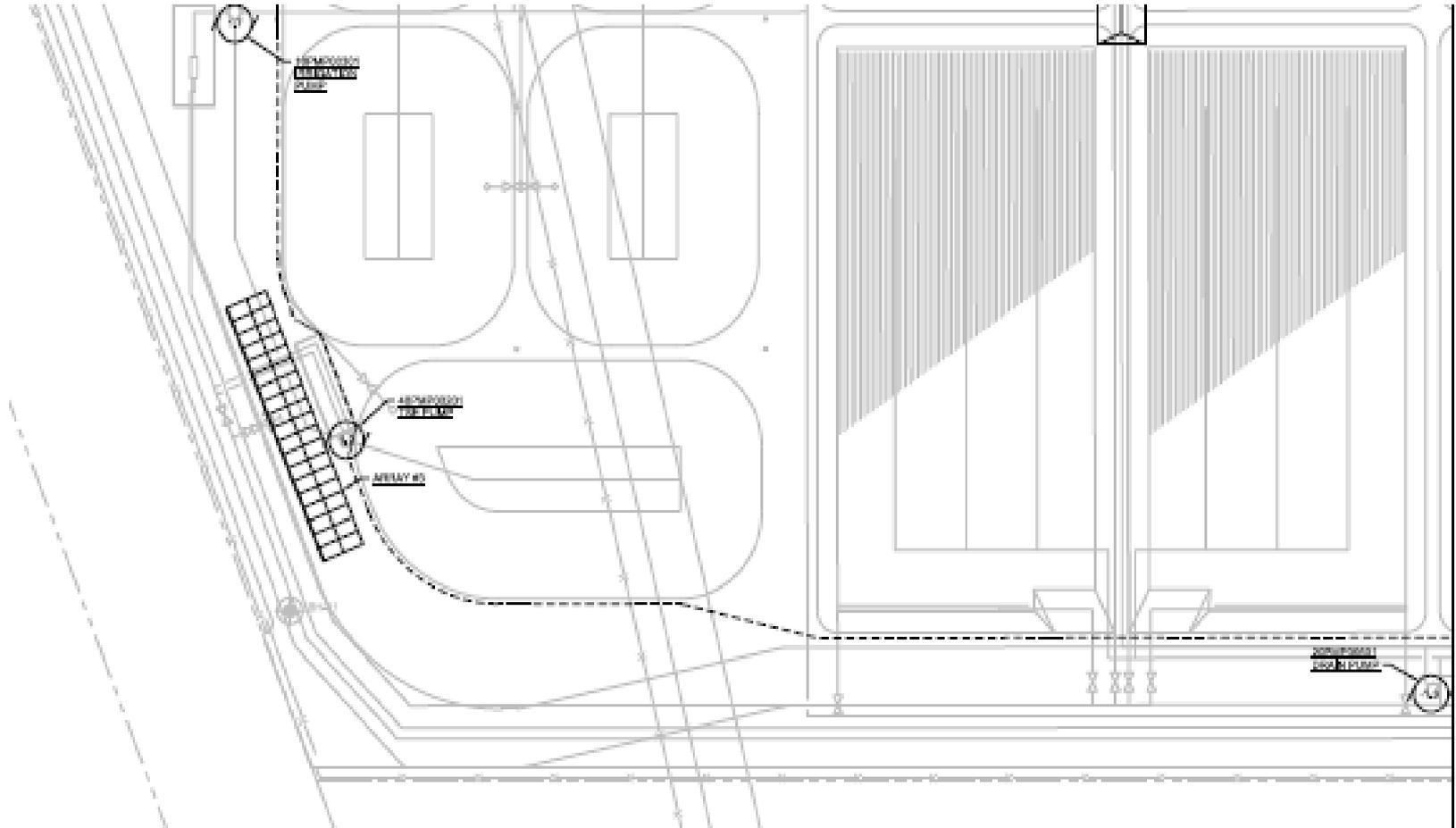
VICINITY MAP
NTS

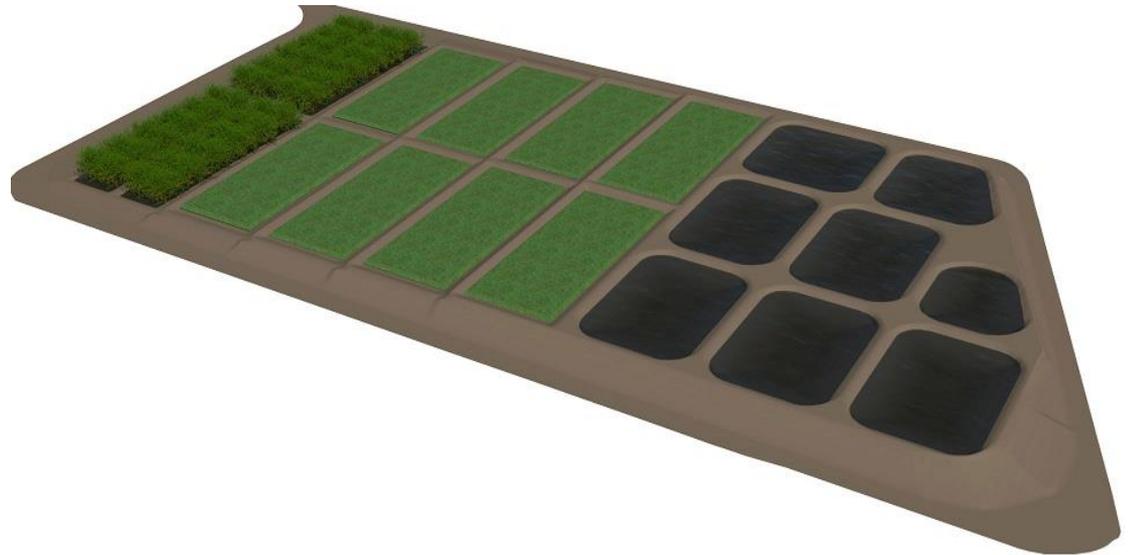
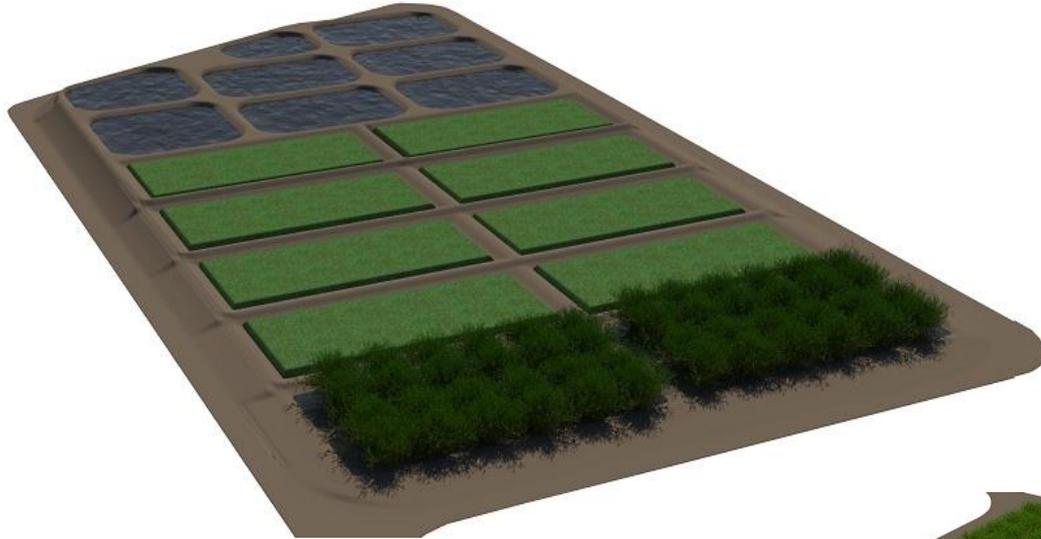
Disclaimer:
The information provided is based on Masdar's GIS records. This information may be incomplete or inaccurate. Contractors should exercise due diligence and take all necessary precautionary measures. Masdar accepts no responsibility or liability arising from use of this information.

Regulated Utilities:
Developer of this plot is responsible to communicate with ADDC and ADSSC, Etisalat and Du for higher power, water, black water and telecomminucation needs at least 12 months prior to the date of the needed services.

NOTE:
Plot size, dimensions and area marked on this drawing are based on Concept Master Plan dated August 05, 2013 and these are subject to change during development of Detailed Master Plan.







- + Food security
- + Water use
- + Industry synergy
- + Knowledge creation
- + Engine of innovation





Thank you!

Comments/Questions?

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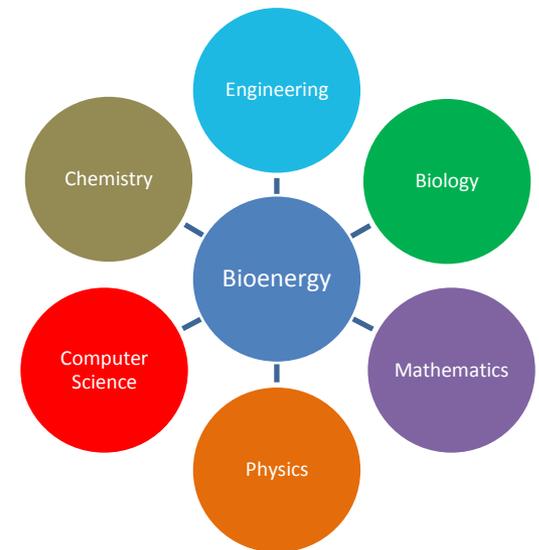




EXTRA SLIDES



- US Department of Energy
 - Over \$100 million USD per year is invested
 - The Bioenergy Science Center (BESC)
 - The Great Lakes Bioenergy Research Center (GLBRC)
 - Joint Bioenergy Institute (JBEI)
 - Energy Biosciences Institute (EBI)
- All Research Centers have a common structure:
 - Multi-institutional
 - Multi-disciplinary



- Common themes:
 - Plants/Feedstocks/Source of biomass
 - Deconstruction/Depolymerization/Getting to the energy
 - Conversion/Fuels Synthesis/Production of Biofuels
- Then, either:
 - Enabling Technology
 - Sustainability





- All centers have a mechanism for engaging in one way or another with industry
 - Transfer scientific advances into viable commercial technologies
 - Partnerships to accelerate innovation and time to market
- “In five years of operation, the Centers have produced more than 1,100 peer-reviewed publications and over 400 invention disclosures and/or patent applications.”

DOE press release

- “We actually have startup companies associated now with the Bioenergy Research Centers, so I think that’s a success story.”

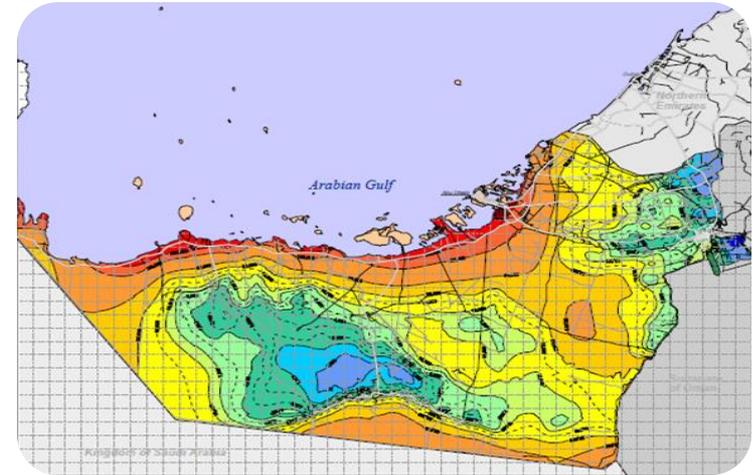
Patricia Dehmer, acting head of DOE’s Office of Science, 05/Nov/2013



Best practices approach

Research Areas:

1. Salt-tolerant and arid land biomass
2. Releasing and capturing bioenergy
3. Synthesizing bioenergy
4. Supporting Technology
5. Sustainability



- A “flight plan” that involves a diverse group of stakeholders

