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# RESPONSIBLE DEVELOPMENT

YPF Sustainability Imbizo 2013

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# What is responsible development?

- What is “responsible”??
  - Based on or characterized by good judgment or sound thinking
  - Involving personal accountability or ability
  - Able to make moral or rational decisions and be answerable for one's behaviour
- Responsible engineering needs to integrally assess impact on
  - Environment
  - Communities
  - Health
  - Well-being

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# What is responsible development?

- Responsible engineering results in sustainable development
- "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs."
- "Sustainability is every one's business", but …
- Civil Engineers play a critical role in delivering sustainable development

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# Outline

- Introduction
- Background and framework
- Sustainable development
- Sustainability tools
- Greenroads™ SA

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# Background

- 1987
- United Nations World Commission on Environment and Development
- ***Our Common Future*** (Brundtland Report)
- Foundation for:
  - 1992 Earth Summit
  - Rio Declaration
  - Agenda 21




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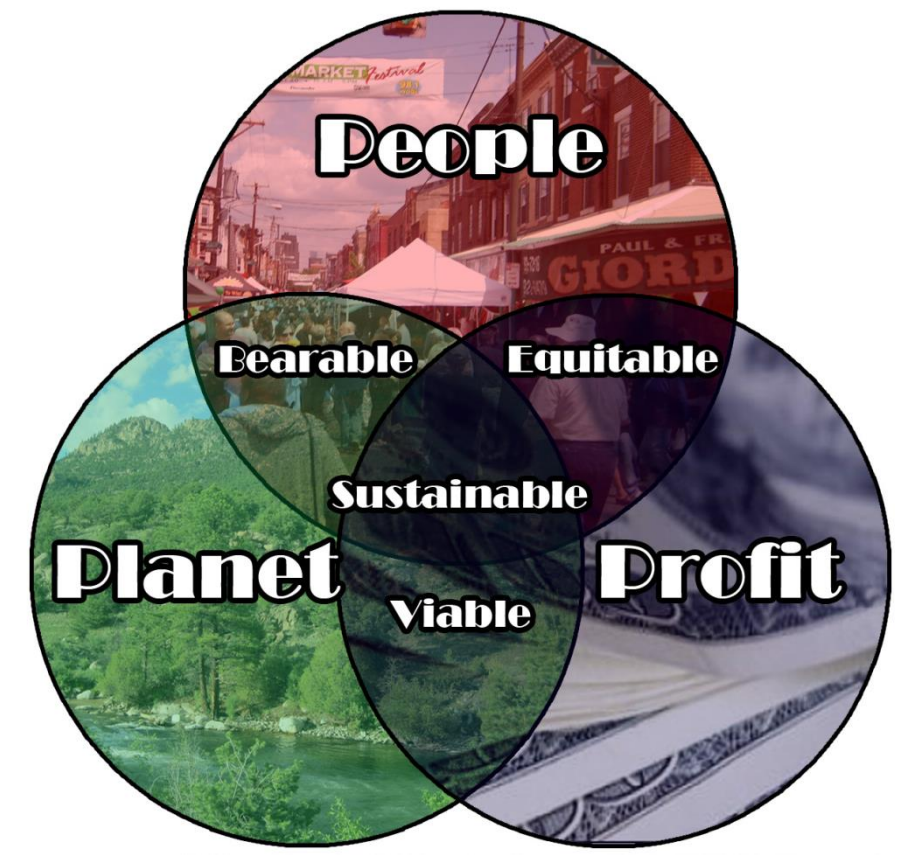
# Background

## Triple Bottom Line

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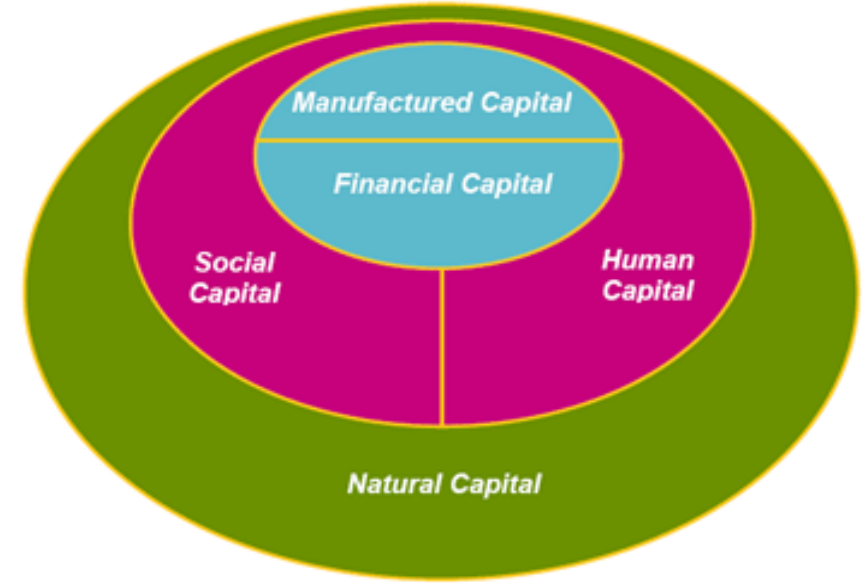
# Background

## Five Capitals Model

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# FRAMEWORKS / GUIDANCE


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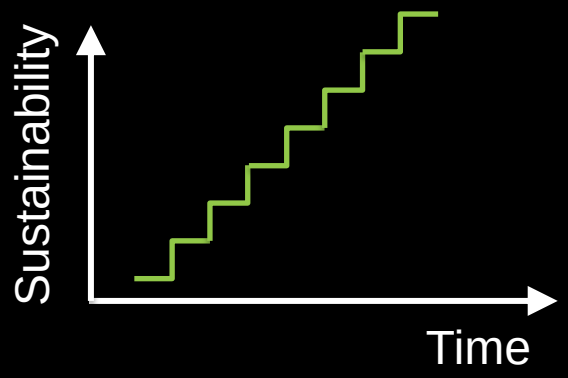
# Sustainable Development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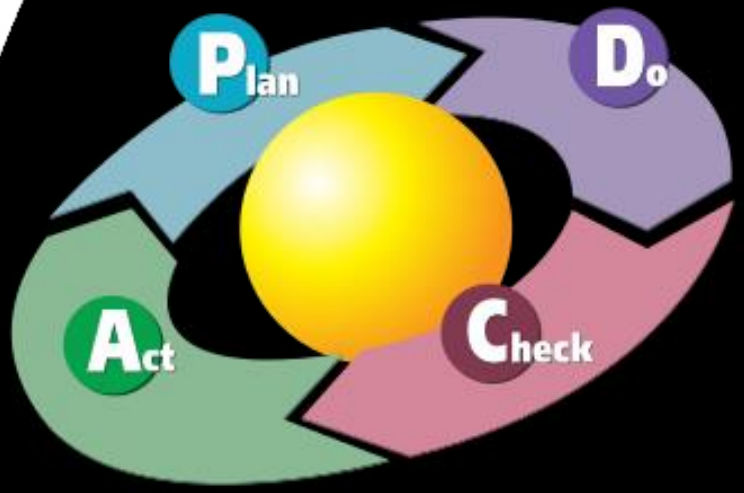
# Project Sustainability Management




- Plan

  Develop a set of goals and indicator for a sustainable project

- Do

  Start project with a plan

- Check

  Monitor and measure

- Act

  Record, adjust, share results

# Sustainability Tools



- Decision-Support Tools:
  - Typically developed by consulting engineers
  - Sustainability guidelines and methodology
  - Provide expert support
  - Multi-Criteria Analysis Methods

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# Sustainability Tools



- Rating & Certification Tools:
  - Typically developed by governmental institutions or NGO's
  - Assess, rate and award
  - E.g. Green Star SA, Greenroads

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# Sustainability Tools



- Calculators:
  - Providing quantitative and qualitative values
  - Provide input for DS and R&C tools
  - E.g. carbon emission, energy use, water efficiency
  - Developed by public sector, private sector
  - BE CAREFUL ! Use reputable calculators

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# Sustainability Tools



- Guidelines:
  - Informative and normative
  - Sustainability quality, standards, indicators
  - Sector guidelines also available

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# GREENROADS™ SOUTH AFRICA

- Rating & Certification tool
- International tool adapted for use in SA
- Credits for projects:
  - Project requirements
  - Environment and water
  - Access and Equity
  - Construction activities
  - Job creation & skills development
  - Materials & Resources
  - Pavement technologies
  - Custom credits

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# GREENROADS™ SOUTH AFRICA

- Examples of credits:
  - Is there an environmental review process (PR-1)
  - Runoff flow control (EW-2)
  - Intelligent Transport Systems (AE-2)
  - Emerging contractors (SE-3)
  - Water use tracking (CA-7)
  - Contractor warranty (CA-8)
  - Pavement reuse (MR-2)
  - Cool / quiet / long-life pavement (PT-4/5/1)

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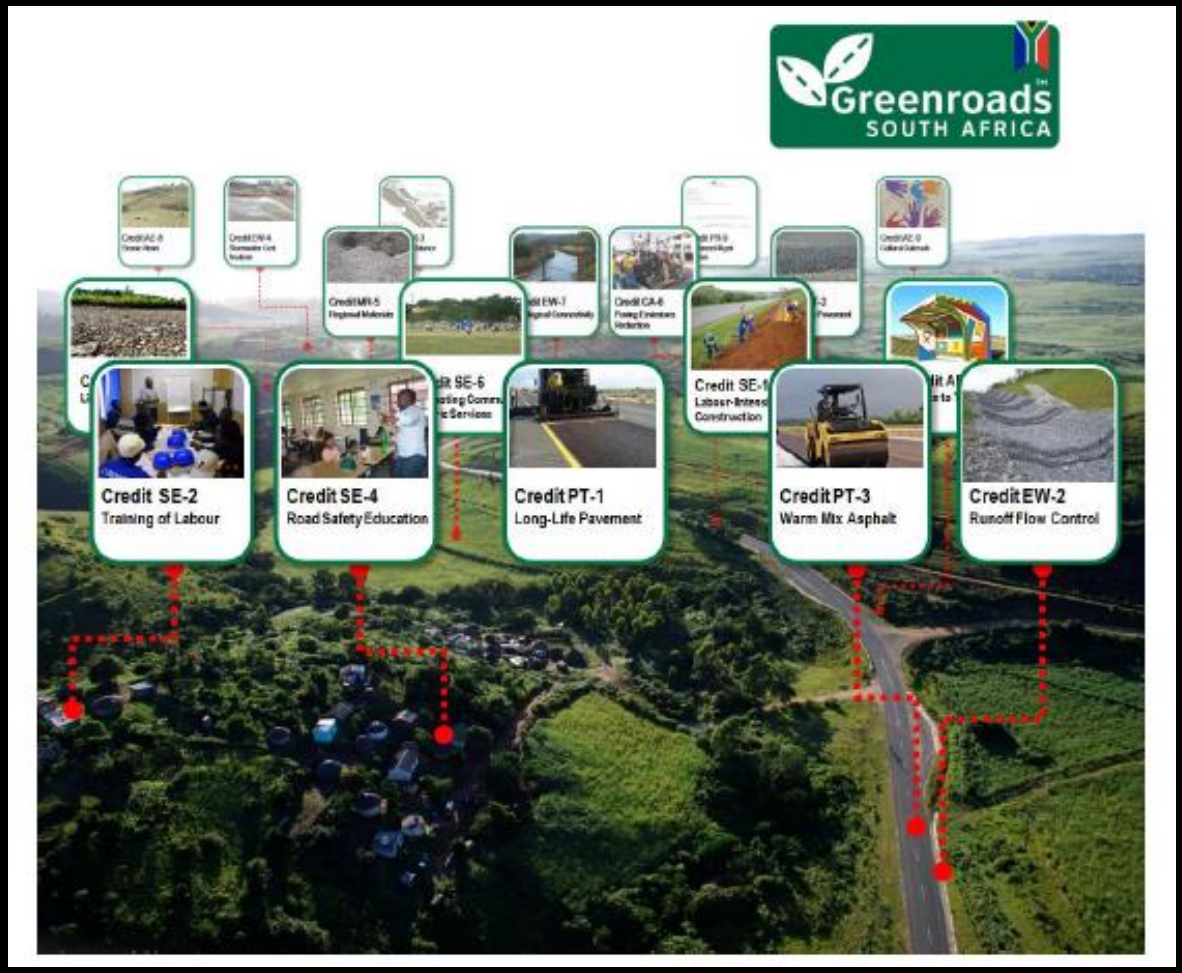
# GREENROADS™ SOUTH AFRICA

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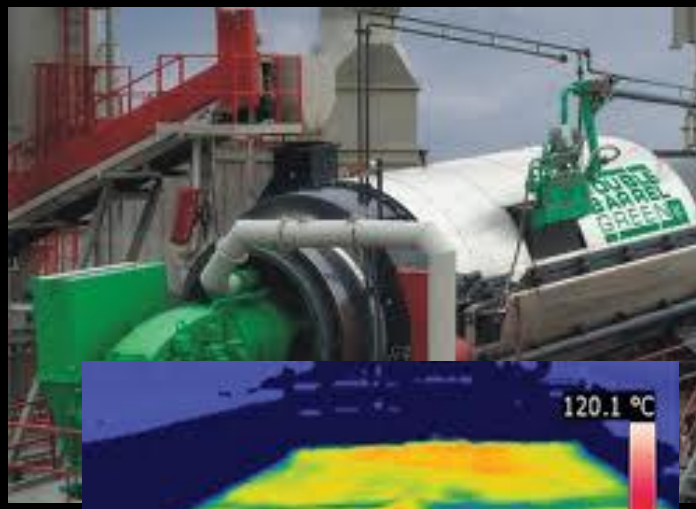
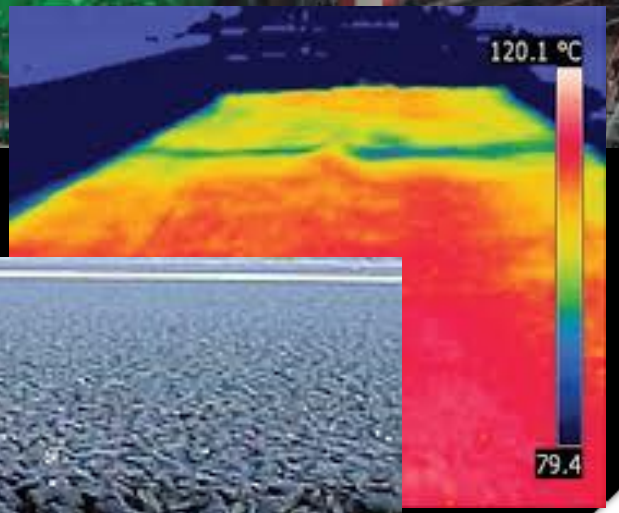
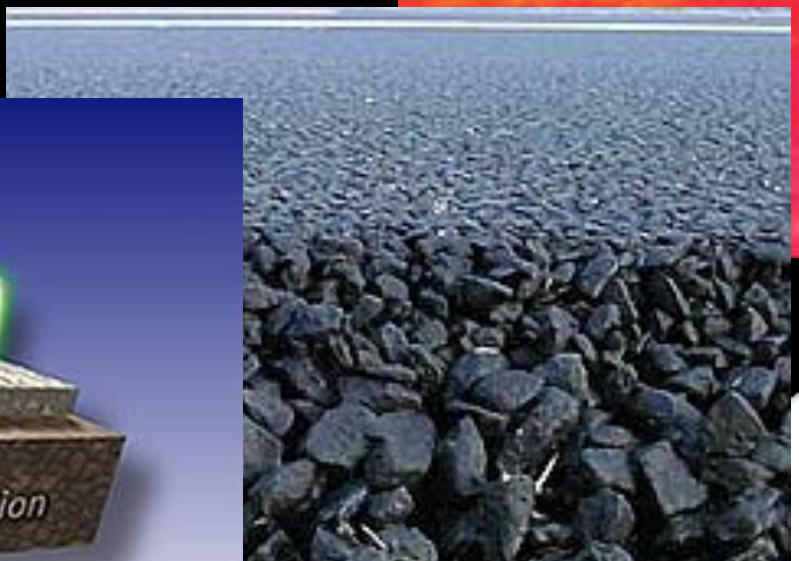
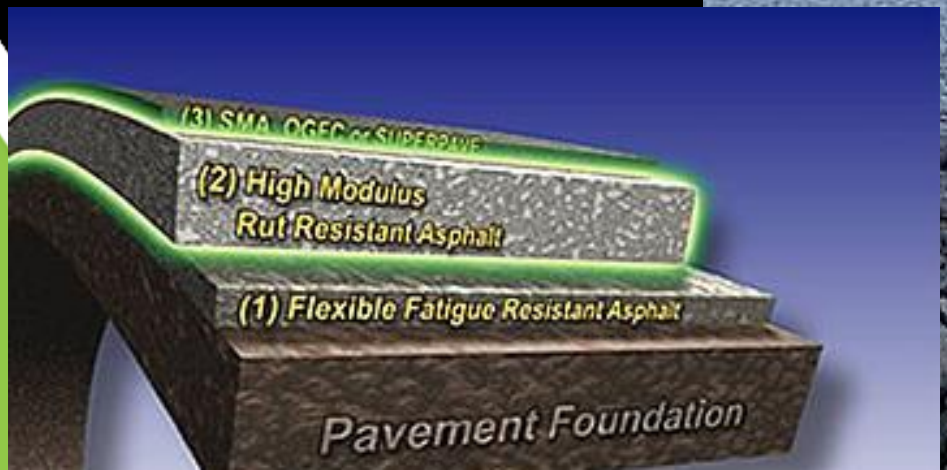
# Pavement Technologies

- Recycling of asphalt
- Warm-mix asphalt
- Noise reduction
- Long-life pavements





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# Responsible Development

It is everyone's responsibility

Particularly for civil engineers

Balancing act between people, planet and profit

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# Thank You

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