

BIO↑SMART

Managing the transition to a 'smart' bioeconomy

WP2 Foresight analysis – envisioning an integrated economy

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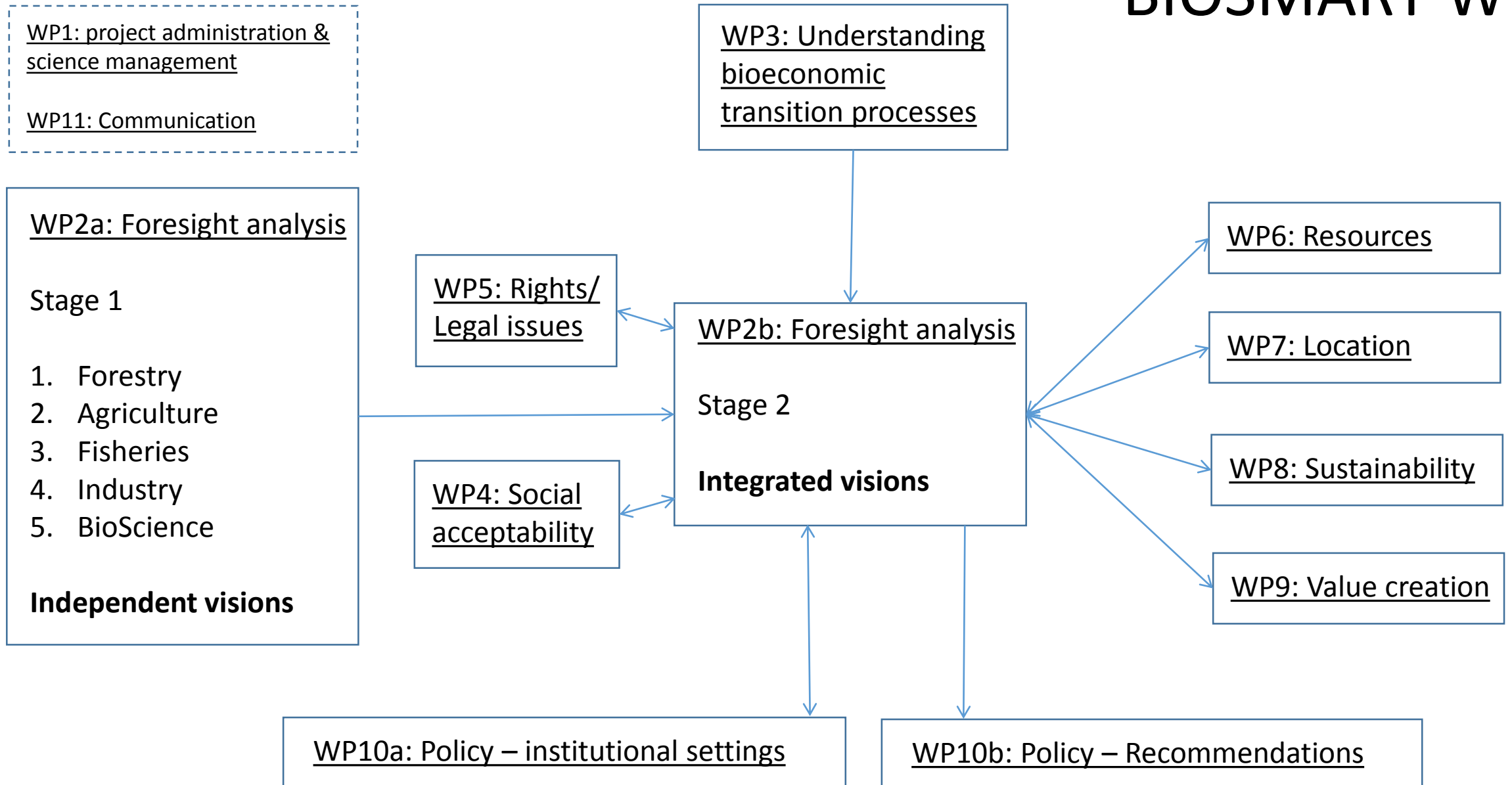
- The nature of the bioeconomic transition depends on “the logic of actors, and to *their representations of the future* at the moment of making their decisions” (Godet et al 2007)
- At the centre of the Biosmart project will be a Foresight Analysis (FA)



Foresight

- *“systematic, future-oriented, analytical and interactive process that partly contributes to shared visions concerning long-term developments within science, technology, business and society and partly facilitates the alignment of relevant stakeholder groupings around desirable developments through relevant strategies, decisions and actions”* (Andersen & Rasmussen, 2014: Introduction to foresight and foresight processes in practice)

BIOSMART WPs

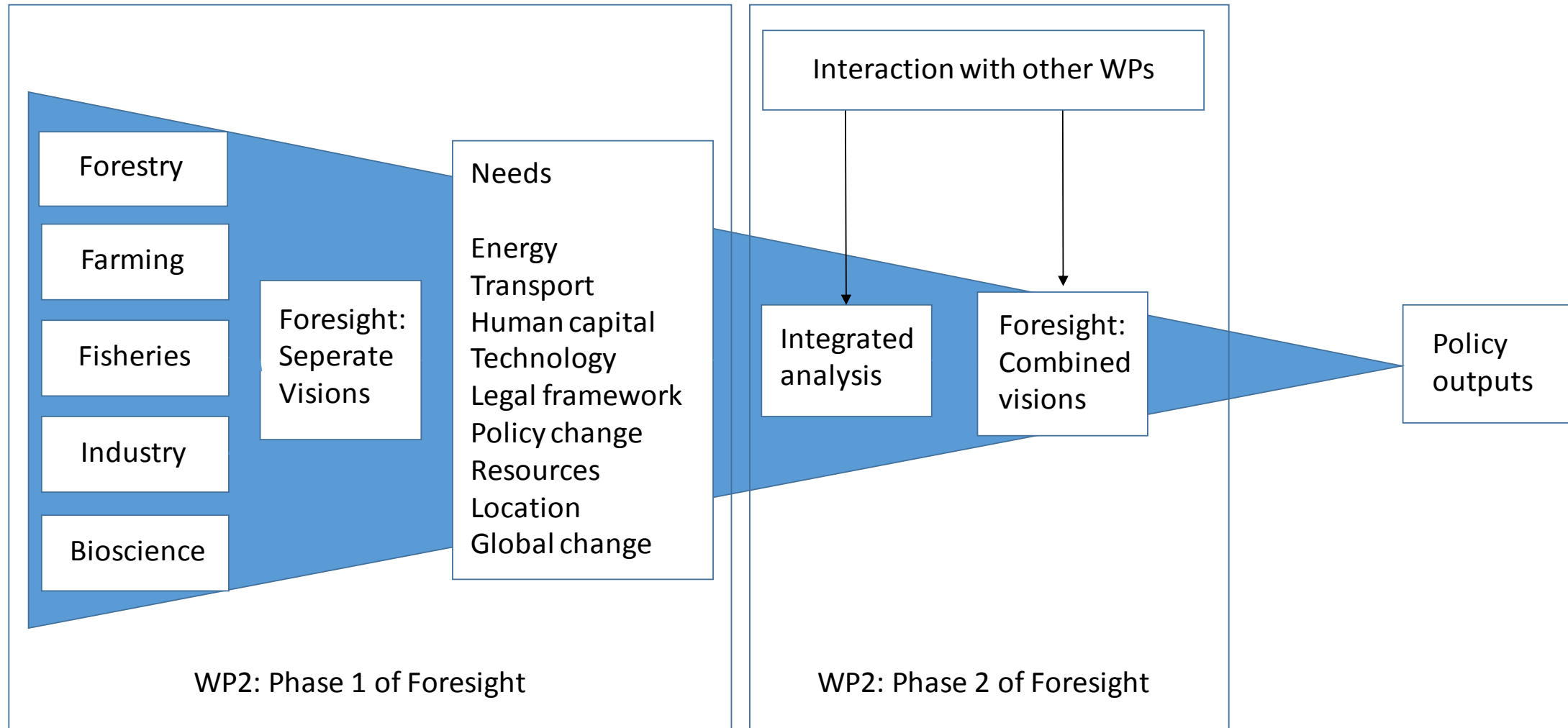


WP2: Foresight analysis

Objective: To develop an integrated stakeholder vision/s of a “smart” bioeconomy in Norway and how to transition towards it.

- WP2a
- postal survey of 300 respondents in each sector (total 1500)
 - identify individual sector positions, bottlenecks, etc.
 - develop individual foresight of the sectors
- WP2b
- analyse individual sector responses for commonalities
 - new focus groups, interviews, etc.
 - identify common visions, common bottlenecks,
 - develop collective foresight

WP2: Foresight analysis



WP2a: Phase 1: Creating sector-based scenarios for bioeconomic development

- **Objective:** To assess individual bio-sector “future images” of the bioeconomy in 2030 and key barriers, resource requirements, and bottlenecks to achieving these future visions.
- **Method:** WP2a will involve a nationwide postal/e-mail survey of experts and leaders in key sectors in the bioeconomy. This will target 300 responses from each sector (total 1500) and across a range of different businesses within each sector.
- Our industry partner (The Federation of Norwegian Food, Agricultural and Forestry Enterprises) and the *User Group* will assist in selection of respondent types (groups within each biosector).
- The questionnaire will be constructed in consultation with *all science WPs* and with the guidance of foresight analysis expert, Dr Kristian Borch.
- Respondents in each sector will be asked to identify key drivers to bioeconomic development for their sector, what they believe development will/should look like (to construct the “future images”), as well as to identify factors that may inhibit or promote development - in particular, energy, transport, human capital, technology, legal framework, policy, resources, location, consumer and citizen demand, and waste issues.
- Issues concerning integration of the sectors (such as waste transfer or shared development costs) will be of particular interest and a number of organisations already operating across sectors (e.g. Nofima) will be identified and targeted with adapted questionnaires looking at issues of integrating the sectors.
- **Output:** “Future images” for each of the sectors as well as key data on related challenges and opportunities. This will be both (i) analysed within WP2b to match sector images/needs, and (ii) form a knowledge database for other WPs at the early stage of the project.

WP2b: Phase 2: Creating integrated scenarios for “smart” bioeconomic development

- **Objective:** To create four detailed and shared “future image” scenarios for the development of a “smart” bioeconomy in Norway across the key bio-sectors the public, and local and national authorities – as well as an understanding of how to manage the transition.
- **Method:** First, the data from WP2a will be analysed to identify common bottlenecks, facilitating factors, locational issues, logistical needs, transitional needs, etc. across all sectors. This will result in the identification of core supply chain issues to be addressed and provide information for other WPs to begin exploring related issues such as resourcing, location and public response.
- Second, we will engage in an intensive foresighting consultation process using collective methodologies, seminars, and individual interviews to explore discourses *between* different stakeholder groups (advised by analysis from *ALL* WPs). In recognition of likely conflicts, the objective here is to develop not one but 4 possible “future images” for the bioeconomy and understand the trade-offs that may be necessary in adopting one view or the other. This will engage a wider range of stakeholders, in particular, citizens organisations and representatives of regional and national governance (in addition to the 5 bio-sectors).
- **Outputs:** The key output of this process will be 4 integrated and in depth foresight scenarios for the bioeconomy combined with an assessment of how to transition to each scenario and the trade-offs that might be required. These scenarios will be assessed for sustainability (WP8) and value creation (WP9) and will form the basis of the policy analysis in WP10.

WP2: Foresight analysis

		Cross-cutting themes (bottlenecks to bioeconomic value creation)								
		Energy	Transport	Human capital	Technology	Legal Framework	Policy change	Material resources	Location	Waste
Sector	Forestry									
	Agriculture									
	Fisheries									
	Industry									
	Bioscience									

Hydrocarbons



Hydrocarbons



Hydrocarbons



Hydrocarbons

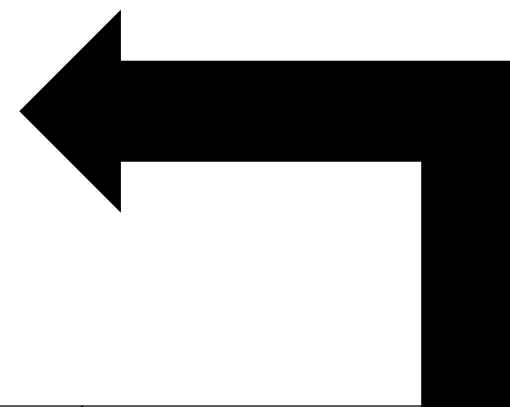


Bio-science

+



Bio-material



Food



Housing



Clothing



Energy



Medicine

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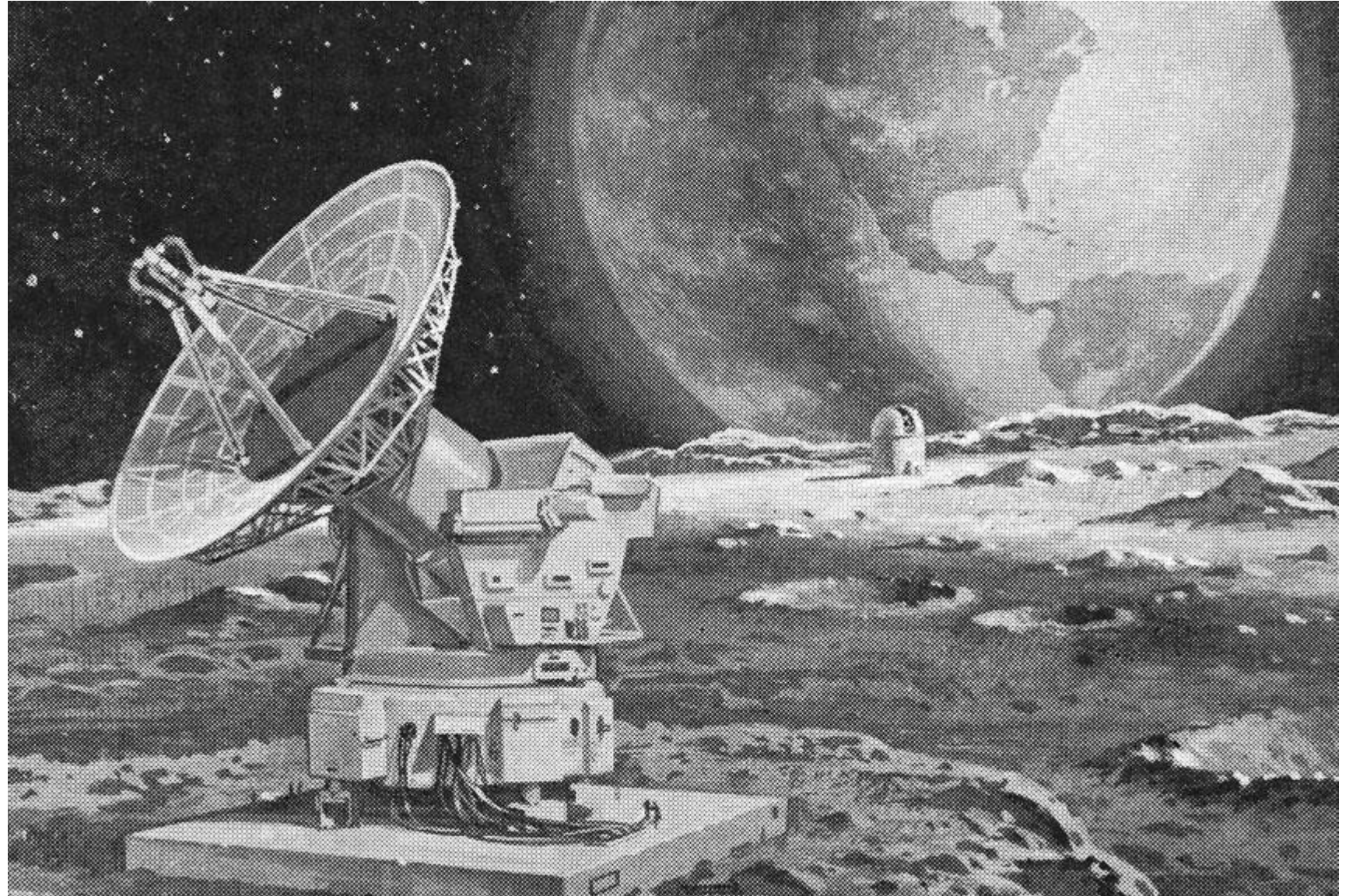
SCENARIOS

Popular Mechanics

Time: 1962

Prediction:
Observatory on the
moon

1973



Stolen from Burton:

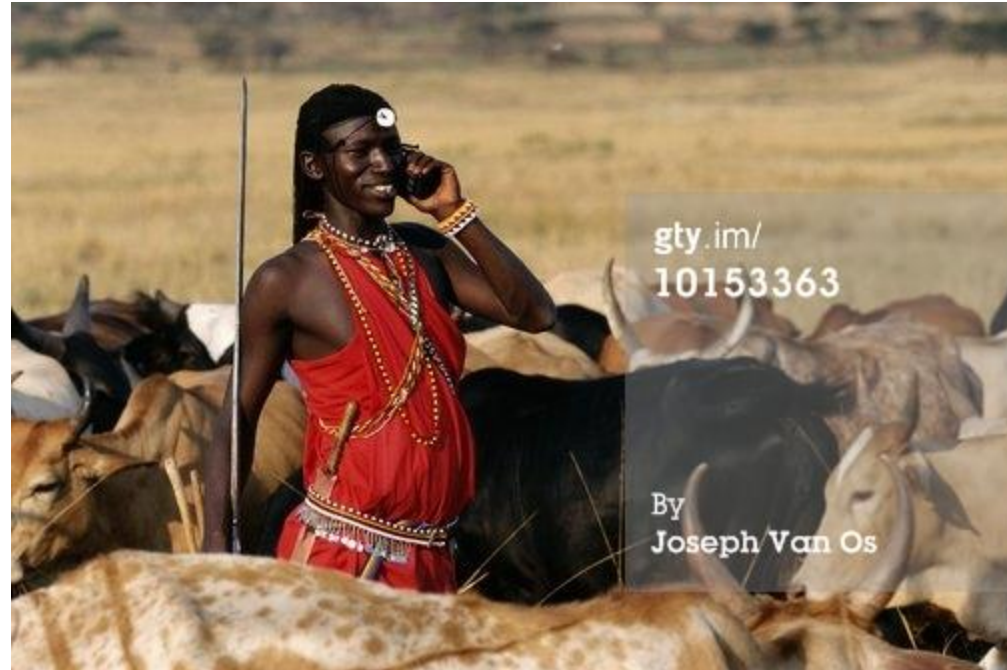
What we got

Segways

2015



What we also have got



What we still have lots of....



Stolen from Internet