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Ecosystems accounting in the UK

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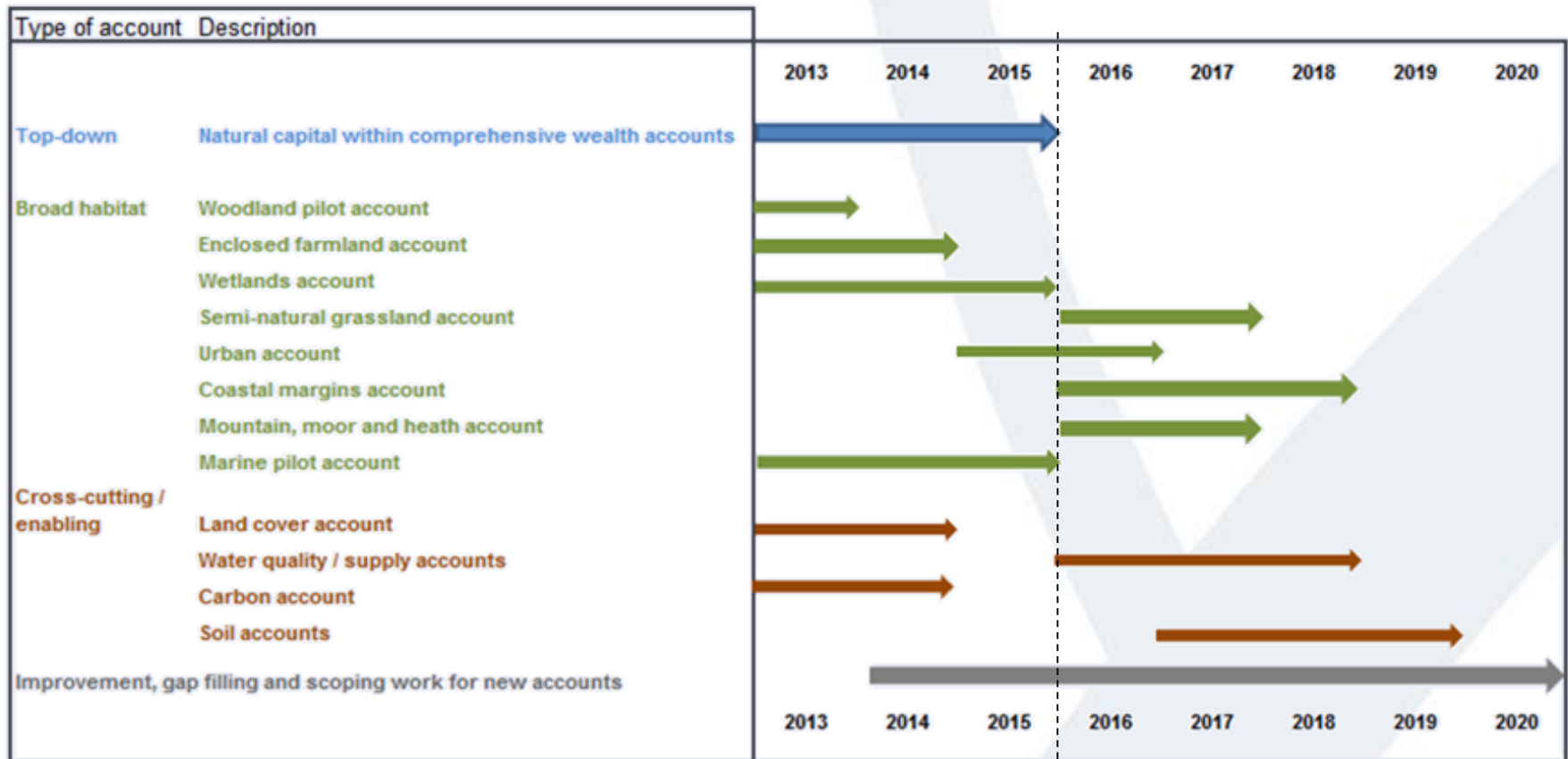
UK Government commitment

“We will put natural capital at the heart of Government accounting. We will work with the Office for National Statistics to fully include natural capital in the UK Environmental Accounts In 2012 we will publish a roadmap for further improvements up to 2020.”

Natural Environment White Paper, 2011

The Roadmap published in December 2012 sets out a timeline for the development of ecosystem accounts

Ecosystem accounting roadmap, 2013-20



Progress has been made in several areas, with a number of publications expected in the near future

Top down accounts

Monetary valuation of **oil and gas** reserves published June 2013

Update note on progress on **top-down** natural capital accounts June 2013

Cross-cutting accounts

Land use/land cover: physical asset account for **land use** published June 2013

Carbon: exploratory work on **carbon in soils** completed, need further research into carbon flows

Priority habit accounts

Initial physical asset accounts for **woodlands and timber** resources assets June 2013

Methodology for monetary valuation of UK **timber resources** June 2013

Discussion paper on **woodlands ecosystem** asset and services accounts June 2013

Further work on woodlands commissioned for March 2014

Enclosed farmland: discussion paper drafted, work on-going

Water and wetlands scoping study to be published March 2014

Marine ecosystems scoping study to be completed July 2014

Need to keep on top of implementation issues

- *Ensuring the engagement and support of the Finance and Environment Ministries*
- *Identification of priorities for the development of the accounts*
- *Management of stakeholder expectations*
- *A coherent conceptual framework*
- *Data and valuation issues*

The UK roadmap sets out expected policy benefits

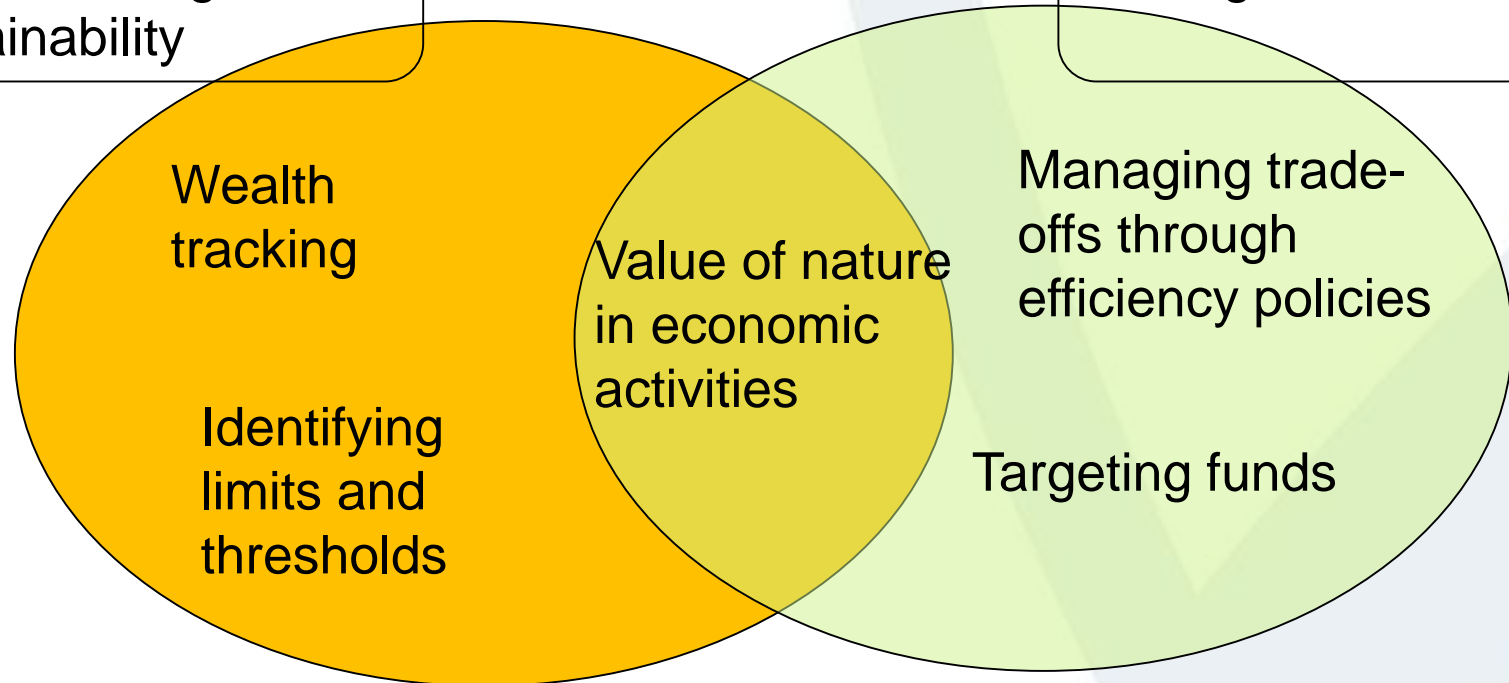
By developing a systematic framework of the assets and services that nature provides, we will be much better able to:

- Assess levels of, and changes in, the natural capital in our country*
- Identify the value and contribution of nature to conventional economic activities*
- Develop policies that efficiently maintain and enhance the value of nature, taking into account potential trade-offs within ecosystems and between different forms of capital*
- Help to prioritise improving certain habitats and target funding*
- Influence international and developing countries efforts to implement natural capital accounting with benefits to global sustainability*

Two broad categories of policy benefits from physical and monetary natural capital accounts

Improved understanding of sustainability

Better resource management



Wealth tracking

Identifying limits and thresholds

Value of nature in economic activities

Managing trade-offs through efficiency policies

Targeting funds

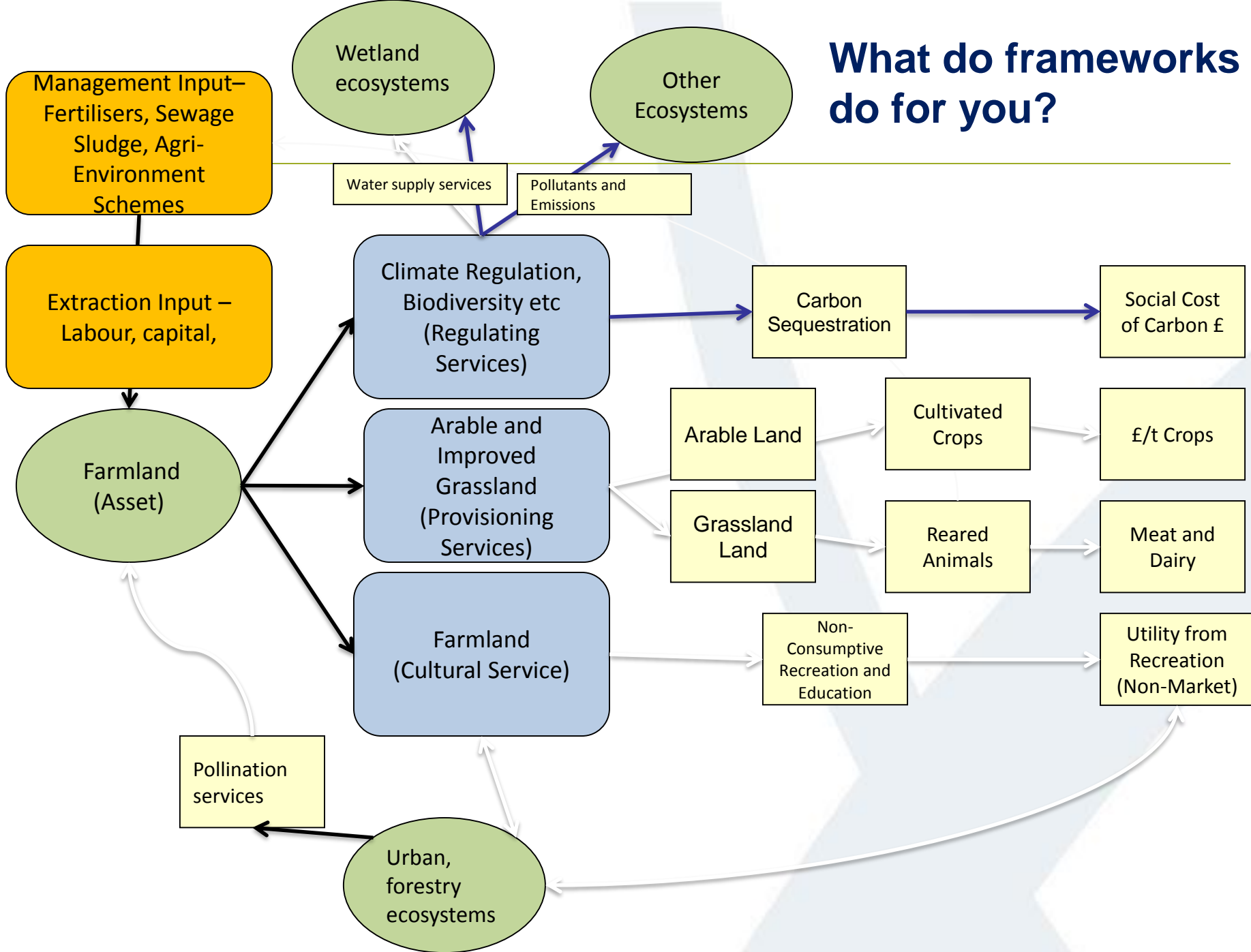
Different ways in which natural capital accounts can drive these benefits

- Provides a coherent framework and a consistent way to look at the significance of nature as opposed to disparate statistics
- Integrated data set for input into environment/economy modelling (*e.g. resource efficiency, land use change, footprint analyses*)
- A basis for measuring performance of public resource management organisations (*e.g. natural capital accounts for the Public Forest Estate in England*)
- Statistics that help orientate policy strategies (*e.g. plant health policy w.r.t. value at risk, fisheries policy w.r.t. stock trends*)
- Supports economy-wide or sectoral indicators of sustainability/environmental performance (*e.g. genuine savings, SD indicator for farming/water industry*)

Conclusion on policy relevance of accounts

- Need to focus on accounts which have the best potential policy applications
- Accounts are likely to be at their most relevant when they provide an input into more detailed analyses => integrated datasets
- When environmental accounts do not have impact, the barrier can be the state of development but also often the result of some inertia amongst potential users
- Indicators can have a big media and political profile even if they are based on much less integrated statistics, but accounting can add much more value to in-depth policy analysis
- Full potential of natural capital accounting (e.g. ecosystem accounts based on detailed spatial data/GIS) is still unknown territory

What do frameworks do for you?



Implementation is raising a number of physical accounting issues

- *Diverse structure of asset accounts depending upon the mix of services provided*
- *The level of spatial disaggregation will affect the nature and coverage of particular accounts*
- *Treatment of biodiversity – indicator of condition but also provides cultural services*
- *Inter-ecosystem interactions – particularly relevant for farmland*
- *Scope and positioning of cross-cutting accounts*

Monetary valuation has an important role in the UK roadmap to natural capital accounting

Account type	Description	Role of monetary valuation
Top-Down	Fast-track work to improve the valuations of the natural capital element of the UN's IWR estimates	Pervasive - key element of the exercise
Cross-cutting	Accounts for widespread natural assets such as land, carbon and water	Initial focus on stock accounts in physical terms, but some valuation may be possible
Habitat-specific	Accounts for particular ecosystems, loosely built around the NEA eight broad habitats.	To cover asset stocks + ES flows in both physical and monetary terms, but extent of valuation may be constrained by data limitations

Valuation principles (1)

- *We will prioritise valuation of those habitats and ecosystem services relevant to policy and management decisions*
- *We will take a pragmatic approach to data availability and overall feasibility of valuation approaches, accepting that in a number of areas we may need to accept a partial coverage of ecosystem services and total economic value*
- *We will not rule out stated preference methods but only use them where they are robust and not obviously inconsistent with SEEA accounting principles*

Valuation principles (2)

- *We will seek to rely on proxy values (including cost-based estimates) in a number of areas where suitable valuation evidence is not readily available*
- *We will seek to highlight overlaps between market and non-market values, linkages and consistency with SNA (and therefore between natural capital accounts and SNAs)*
- *We will develop a protocol for dealing with the inevitable lack of uncertainty / robustness associated with valuation estimates*

Monday's Seminar on valuation

- *An overview of valuation techniques for ecosystem accounting*
- *Accounting for the value of wetland*
- *Valuing regulating services in coastal habitats*
- *Accounting for the value of pollination services*
- *Recognising and managing uncertainty in national and environmental accounting*
- *Selecting discount rates for natural capital accounting*
- *Towards a consistent approach for ecosystem accounting*
- *Natural capital accounting*

Issues from Monday's seminar

- *Greater clarity of role of valuation for different purposes*
- *Discount rates*
- *Treatment of restoration costs*
- *Uncertainty*

Key messages from Monday's seminar (1)

- Extension of production boundary not unique to natural capital and accepted by SEEA/accounting community (including the inclusion of some non-use values)
- Outstanding concern is one of consistency of methodology (the $p \cdot q$ vs. CS issue). Need to understand what is in line with SEEA principles, even if to decide when to depart for non-extended account analysis
- What economists should do to narrow the gap in perspectives:
 - First step: demonstrating that valuation techniques can produce a demand curve/marginal price (Broadly economists think they can do this)
 - Second step: demonstrate how we can establish a reasonable exchange value on those demand curves. Several techniques are OK (adjusted market prices, production function approaches, hedonic pricing) but arguments need to be made more explicitly
 - For pure public goods, do more thinking on choosing 'p' on the demand curve. Possible value of SEV approaches to be explored further

Key messages from Monday's seminar (2)

- Need to demonstrate how SEEA principles and economic theory can be reconciled (i.e. relationship between asset accounting prices and shadow prices)
- More work needed on accounts structure and in understanding the actual extent to which natural values are already reflected in SNAs. Reorganising vs. extending (both relevant but quite a bit of the former needed)
- Thresholds – gaps in scientific understanding. Limited ability to reflect these in prices in the short term. Physical accounts/assessment important to complement monetary accounts in understanding thresholds
- Conceptual work on valuation can often be ahead of empirical understanding of ecosystem processes – more scientific research needed to increase overall confidence in the accounts

Key messages from Monday's seminar (3) – discount rates

- Discount rate, progress from:
 - “Market rate because is in SEEA” (but different approaches are on the table in practice)
 - “Social discount rate because we need to think sustainable” (but social discount rates may be “high”)
- To:
 - Think about intertemporal rate of change in relative prices – how it applies within an accounting context
 - There could be a parallel with the p^*q vs. consumer surplus
 - Decisions of allocation on publicly owned assets, made in the interest of society – a possible reason for using social discount rate)

Key messages from Monday's seminar (4)

- Agreement on importance of prioritising assets that are high value and at risk
- In principle we would all like to be able to rely on value-based estimates of natural capital (i.e. reflecting value of capacity of ecosystems to provide services, suitably discounted and aggregated)
- Restoration cost estimates could provide valuable information for policy assessments and could be included in separate monetary accounts (worth looking at the experience of countries that have tried this)
- Need to be clear about implicit, overall sustainability assumptions (not just thresholds). Need complementary analytical perspective

Key messages from Monday's seminar (5) - uncertainty

- On uncertainty, key is to recognise it and make sure use is consistent with underlying quality
- Data Quality Assessment Framework for SNA could be extended to SEEA/Experimental ecosystem accounting
- Lack of error bounds is a shared feature with National Accounts and does not prevent them from being useful
- Need to go up the learning curve – move ahead with compiling experimental accounts as opposed to stopping at the conceptual stage
- Need for prioritisation. Resources are scarce

Conclusions and issues for discussion?

- *Ensure close links to the research agenda*
- *Urgent need to establish effective policy applications*
- *Important role of National Accountants in valuation issues*
- *How best to work together, ensure we learn from new development work*