**Chapter 3**

**Section A (conservation investment)**

*Because the chapter is going to be in two sections, I think I want to avoid big overarching sentences about deforestation, as these will end up being repeated. I think it will be better to make statements about deforestation in the context of the main subject i.e. either conservation investment or PES.*

**Introduction**

Global conservation funding is currently inadequate to eliminate biodiversity loss. Previous estimates suggest that in 2010 only 12% of the required $0.875 billion – $1.23 billion was being spent on conservation, leaving the global conservation funding shortfall in the order of $0.77 billion - $1.08 billion (McCarthy et al 2012). Although global estimates such as these are unlikely to be accurate, the order of magnitude conveys the scale of the funding challenge. Therefore, to have the greatest positive effect on the conservation of biodiversity as possible, managers and conservationists need to ensure the investment of scarce resources is strategic and efficient, and must strive to maximise the biodiversity outcomes of each dollar spent.

Investing conservation funds strategically is made more difficult by the dominant funding model that exists in conservation which is based on short-term grants (generally 1-5 years). Most conservation projects or initiatives, even in wealthy countries with relatively well-funded protected area networks, rely on such short-term grants to launch programmes, conduct research, and implement key activities such as training, engagement, enforcement, and outreach. This funding model results in long-term budgets that are non-linear, unpredictable, and do not necessarily track changes in threats. The financial stability of a conservation project, or organisation, is reliant on the ability to leverage external funding through grant applications, which are inherently competitive and have a low success rate. Therefore, conservation projects go through periods of relative affluence when conservation activities (such as enforcement, policy interventions, community engagement) can increase in scope and scale, ultimately leading to net benefits for nature. The same projects will inevitably go through periods of financial hardship, which often occur in between grants. During these periods financial expenditure is restricted to minimal core activities, project activities wind down, staff redundancies occur, and initiatives end. These periods can have serious negative effects on conservation projects. Organisations lose talented staff and institutional knowledge, trust between stakeholders and the project/organisation can be lost as commitments may not be met, and stakeholders may view the project as unreliable or short-term due to inconsistent support. In many parts of the world where unregulated or illegal activities such as forest clearance and hunting of wildlife threaten conservation landscapes, periods of financial hardship can cause increases in these activities as project support for enforcement, engagement, outreach, and overall project visibility decreases.

Deforestation is driven by complex array of drivers operating at different scales, and the loss of forests has negative consequences for biodiversity, the climate, ecosystem functioning, human well-being

**Points to remember to make:**

Look up papers Georgina Mace and someone de Fonso (? Ask Nils) about indicators. They did theoretical work looking at indicators like in species populations etc.

Need to make the point that nothing else in my landscape is affecting the system – it is very simplified. It doesn’t matter therefore, where the starting values are, it’s more about the relative relationships.

Towards the end, make sure to mention the benefits of simulation modelling (look at the Twitter discussion Nils was in about papers that emphasis this), and to point out that in order to tease apart theory, you have to make the simulations extreme – pushing things to the extreme pulls apart theoretical ideas so you can see trends etc.