**Notes provided to Warwick Murray**

**Follow-up from OVERSEER meeting 28th August 2018**

**OVERSEER as an open source code:**

There are various definitions of open source model code.  I start with one of the simplest definitions and then qualify this to try to make a suggestion for what it might look like for OVERSEER. Models such as OVERSEER commonly have an executable code (i.e., the version that is commonly distributed to be run by a user) and a source code (i.e., the version that provides the underlying mathematical equations, commonly coded in a computer language, and which is compiled in order to create the executable).  Documentation is commonly associated with each of these codes and may include such things as: (a) a user manual for running the executable model, (b) a science manual which describes the underlying equations and may be updated in full or through briefing notes when modifications are made, and (c) a programmer’s guide with instructions specific to those who development and alter the code, and compile it.

Open-source software (OSS) is distributed with its source code so that it is available for modification. The software usually includes a license for programmers to change the software in any way they choose. The license can specify restrictions to the rights of the source code developer as well as obligations of the developer.  For example, it may include agreement that a copy of code modifications and relevant documentation is made available to the owner/manager at periodic intervals.  It might also fully restrict the distribution of the source code to a third party or it may specify a limited distribution (e.g., to a research group).  The underlying basis for this type of agreement is generally to benefit the owner/manager of the code by supporting in-kind or targeted code development which can then be brought into an improved mainstream product (i.e., a stable executable code).  The concept behind open source code is that the license is designed in a way that provided net benefits to the owner/manager but is not so restrictive as to not make it worthwhile to have a wider group of developers involved.

As indicated in our meeting on OVERSEER at AgResearch (28/8/2017), I believe that there could be significant benefits with licensing source code to select developers.  These benefits could relate to a wider group of developers to contribute ideas, develop specific modules of the model and to improve documentation. There would seem to be good opportunities to develop a cohort of new developers through leveraging postgraduate research opportunities.  My concept of source code distribution is not for a ‘free for all’ with multiple versions of the source code which the owner/manager is not aware of, or with executables being compiled and distributed independently of the owner/manager or outside of the license agreement.

* 1. What would you expect OVERSEER could or must do to get the confidence of the science community? It would seem that some aspects of getting material from OVERSEER in a peer reviewed journal might be quite difficult as Mark said it may not have any particular “novel” value. David Wheeler did state that they have their user manuals. Do these help support the science credibility? What more might be needed?

**An engagement strategy** (in *increasing* order of importance below):

1. Social media

Use of Facebook, Twitter, etc. to provide quick updates

2) Website.

This might detail such things as:

i. Personnel involved;

ii. R&D themes/critical steps

iii. History of model versioning.

3. Newsletters

Newsletters to give team member profiles, action partner connections, project summaries, recent presentations and publications

4. Fact sheets

Two-pagers that can be widely distributed, including an overview of the model, key applications (case studies), specific new developments, how the model has been used in planning and policy situations.

5. Publications

There is model documentation and several reports and conferences on OVERSEER, but it would be useful and strategic to consider getting publications about OVERSEER in the scientific peer reviewed literature.  Ideally, a paper providing a general conceptual outline of the model would be likely to be widely cited. These types of papers are not so easy to publish but could perhaps be done as part of a special issue on OVERSEER (e.g., in NZ Journal of Agriculture).  A good strategy, some timelines and some funding for this purpose would be the perfect scenario.