**Hydrology and
Earth System
Sciences
Discussions**

Interactive
Comment

Interactive comment on "Food consumption patterns and their effect on water requirement inChina" *by* J. Liu and H. H. G. Savenije
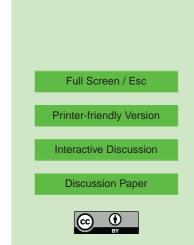
Anonymous Referee #1

Review:

This is a relevant and elegant paper. The topic is timely and widely debated right now. The authors collected large quantify of relevant data and try to quantify how food consumption patterns influence water requirements in China. In this sense, it addresses relevant scientific questions within the scope of HESS. There is no formal model used in the paper but the analysis of the existing data clearly demonstrated the consumption pattern changes over time and the water scarcity problem in China. The conclusion from the analysis is strong but not surprising.

However, I do have a few major concerns:

1. The first concern is aggregated nature of the whole analysis. While it is under-

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

standable to analyze consumption pattern on national level, water resource has much spatial heterogeneity. As we all know, water scarcity is a severe problem in northern China but there is abundant water in most southern part of the country. So discussing water scarcity on a national scale would give a distorted picture of China.

2. The flow of information in this paper is hard to follow. While the four large sections (introduction, materials and methods, results and discussion, conclusions) are clear, the sub-sections under these sections are almost randomly piled together. I have a hard time to follow the logic flow. I would suggest the main sections use the content-related titles as in the subsections, and re-group the sections into main themes such as total water requirement for food, virtual water content, energy water productivity. The current conclusion section is an extension of former discussion and even introduces new topics. Such discussion should be in the former sections. I would like the conclusion is summary of the major points discussed before and some implication on policy.

There are so many quoted data and cited references that they almost annoying and detract the reader from the main message. I suggest the paper focus more on the main storyline. Replacing some data within the text with inserted tables/figures would be an option.

3. I found the three future scenarios specified by the authors are quite subjective and without much evidence, and the analysis based on these scenarios are quite simplistic or even naïve. The society is quite complex and people are adaptive. In addition, technological change is another major factor in water scarcity and consumption patterns in China. For example, the high consumption for livestock may be tempered by higher prices for these products, and trade policy (depending on the current WTO round) may have impact on Chinese import/export of food (livestock included). Simple interpolation/extrapolation is misleading.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

4. The paper presents a few novel concepts but it has no formal model. I would suggest the authors add a few more tables and figures to support their arguments.

Some minor issues:

1. Table 1: would like to add the source of these numbers. Are the Chine-specific numbers available?

2. Page 35, line 4: I would like to have the historical consumption table included in the main text, rather than hidden in the SI. The consumption is the key point this paper is trying to make.

3. Page 39: I'd like more detail on the three scenarios. More details how the authors use these scenarios in projecting the future are also helpful

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 27, 2008.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper