Multifunctionality and Sustainability; A New Future for Small-Scale Farms

多功能性与可持续性：小规模农场的未来

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I am not an authority or expert in Chinese agriculture. 并非中国农业问题的权威和专家

I grew up on a small farm, and I have worked extensively with small farms and sustainable agriculture.

在一个小农场中长大，在工作中经常接触小农场和可持续农业

I spend the first half of my 30-year academic career as an advocate of industrial agriculture and large farms.

30年学术生涯的前半部分是工业化农业和大型农场的倡导者

I eventually was forced to conclude that industrial agriculture and the resulting large farms are not sustainable.

最终不得不承认，工业化农业和大型农场是不可持续的

I have spend the last 25 years as an academic advocate of sustainable agriculture and small farms.

最近的25年来致力于从学术上推动可持续农业和小规模农场

Characteristics of Small-Scale Farms
小规模农场的特征

rofessor Ye Jingzhong; (FAO-UN - Year of Family Farms) 叶敬忠教授的研究发现
（联合国粮农组织，2014“家庭农业年”）

sian and Pacific Small-Scale Family Farm Are:亚太地区的小规模家庭农业是：

- Motivated by livelihood, satisfaction, family; 由生计、满足和家庭驱动的；
- Are labor intensive, diversified, locally oriented;劳动集约的、多样性的、地方性
- Support food sovereignty and are environmentally and culturally friendly.
  利于食物主权，是环境和文化友好的。

hese same characteristics are typical of small family farms in the Unite
tates, although U.S. family farms are larger. 这些也正是美国小型家庭农场的特征，
美国家庭农场的面积要大得多。

Small Farms are Essential for Sustainability.
小农场对实现可持续性至关重要

have written and spoken about small farms many times.我曾多次围绕小农场进行写作和演说

In my FAO-UN report: Family farms of North America 在联合国粮农组织报告中：北美的家庭农场

In my book: Small Farms are Real Farms 在我的书中：《小农场是真正的农场》

any people believe sustainability is not related to size of farm. 很多人认为，可持续性与农场的面积无关

gree, many small farms in the U.S. today are not sustainable. 我同意这一点，今天美国的很多小农场也是不可持续的

owever, small farms can be managed to meet the needs of the present without diminishing opportunitie or the future. 然而，小农场可以在不减损未来生活机会的情况下满足当下的需求

order for today's large farms to be managed sustainably, they would have to be divided into smalle arms. 今天的大农场要想实现可持续运转，就必须划分成规模更小的农场

What size of farm is considered small-scale?
多少面积的农场是“小规模”的？

The farm sizes considered “small” and “large” are different in the U.S. an
China – also for different types of farms. 美国和中国在农场面积上的“大”、“小”
念不同——对不同类型农场的理解也不同

“Market-dependent” subsistence farms must be larger. “市场依附”的生存型农
肯定面积较大

I believe, “large” and “small” exists mainly in the minds of farmers: would th
farmer prefer a larger or smaller farm? 我认为，“大”和“小”的概念主要存在于农
的头脑当中：农民会倾向于一个更大还是更小的农场呢？

Regardless, beyond some absolute size, a farm becomes too large to b
managed sustainably. 此外，超出了某个绝对面积之后，一个农场就会变得太大而无法实现
持续管理

Farmers historically were held in high esteem.
自古以来农民是极受尊重的

xamples Include: 一些例子：

- Books: *Farmers of Forty Centuries, An Agricultural testament*. 书籍：《四千年农夫》、《农业圣典》
- Thomas Jefferson, 3rd U.S. president, admired the virtue of "yeoman farmers." 美国总统杰弗逊（第三任总统）赞了"自耕农"的价值
- Adam Smith, early capitalist, noted farmers were honored in China and India.亚当•斯密，早期资本家，注意到农民在国和印度很受尊重
- Confucius, philosopher, ranked farmer highly, below only clerics and scholars.孔子，中国的哲学家，赋予农民极高的位，仅次于士和文人。

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storically, the words "farm" and "farmer" have always had multiple meanings:自古以来，"农场"和"民"总是有着多重含义：

- Economic: rent, revenue, means of living, purveyor. 经济的：租金、收益、生存、提供者
- Social/spiritual: spirit, feast, haven, vitality. 社会的 / 精神的：精神、节日、避风港、活力
- Ecological/Sustainable: stewardship, strength, security, sustain. 生态的 / 可持续的：管家、力量、安全、支持

Farms honored in past were *multifunctional.*
旧时得到赞誉的农场是多功能性的

Farms esteemed by Jefferson, Smith, and Confucius provided economic, social, and ecological benefits. 弗逊、斯密和孔子所推重的农场带来了经济、社会和生态上的益处

They all ranked businessmen and financiers among the lowest. 他们都把商人和金融家排在社会等级末

All farms have multiple “impacts” – which may be either beneficial or detrimental. 所有的农场都有重“影响”——可能是有益的，也可能是不利的

Farms managed solely as businesses invariably have detrimental social and ecological impacts.仅仅作为业运作的农场总是会产生不利的社会和生态影响

Farms managed for multifunctionality – farms that are intentionally multifunctional – can provide multip benefits. 为实现多功能性而运转的农场能够带来多种收益

Farm size or scale reflects functionality
农场的面积或规模体现了功能性

Farms of the past were “small farms;” not estates or plantations.过去的农场是“小农场”，不是庄园和种植园

Today’s “large farms” have more in common with industry than farming and would likely be ranked a businesses or investments.今天的“大农场”与工业（而不是农业）有更多相似之处，这些农场愿意跻身企业或投资的行列

Today’s farms are large because they specialize, standardize, and consolidate control or management t achieve “economies of scale.”今天的农场之所以面积大，是因为它们是专业化、标准化的，并且在控制或管理上进行了合并以实现“规模经济”

Today’s large farms are “mono-functional;” they are managed for the single economic bottom-line.今天的大农场是“单一功能”的，它们的管理运转是为了单一的经济要旨

Farmers trust markets to ensure social and ecological benefits, but markets have never protected th environment or fed the hungry. 农民相信市场能够确保社会和生态效益，但是市场从来也没有保护环境或是消除饥饿

Large, mono-functional farms have detrimental environmental and social impacts.
大型的、单一功能农场具有不利的环境和社会影响

arge farms dependent on: 大农场依赖：

- Non-renewable fossil energy, irrigation, chemical fertilizers, and pesticides.不可再生的化石能源、灌溉、化肥和杀虫剂
- Large, confinement animal feeding operations (factory farms).大型封闭式牲畜饲养（工厂化农场）

Ve see the negative consequences. We see: 我们已经看到大农场带来的负面影响，例如：

Eroded soils and depleted irrigation aquifers and streams. 被腐蚀的土壤，枯竭的灌溉含水层和河流

Air and water polluted with chemical and biological wastes. 化学和生物废弃物污染了空气和水

Demise of independent family farms and decay of rural communities. 独立的家庭农场的终结和农村社区的衰落

- Fewer and lower-paying employment opportunities in agriculture. 农业就业机会的减少和薪酬降低
- Large farms are degrading the usefulness of nature and society. 大农场正在使自然和社会的效用退化
- All economic value comes from nature by way of society.所有的经济价值都来自于自然（经由社会）
- Large, mono-functional farms are not sustainable. 大型的、单一功能农场是不可持续的

Large farms are not needed for food security.
大农场无助于粮食安全

In the U.S. we are told we must accept ecological and social risks to ensure “food security” – meaning enough fo to support health, active lifestyles.在美国，我们被告知必须要接受为确保“粮食安全”（意味着有足够的粮食支持健康的、积极的生活方式）而产生的生态和社会风险

However, the U.S. has more hungry people today than in the 1960s. More than 15% of adults and 20% of children li in “food insecure” homes.然而，与20世纪60年代相比，今天美国社会面临饥饿的人口数量更多，超过15%成年人和20%的儿童生活在“粮食不安全”的家庭中。

Food from the industrial food system is a cause of an epidemic of diet-related diseases: obesity, diabetes, hea disease, high blood pressure, various cancers. 来自工业化食品体系的食品是导致与饮食相关的疾病流行的原因肥胖症、糖尿病、心脏病、高血压、多种癌症。

Internationally, the Green Revolution failed to provide food security. 在国际上，绿色革命并未带来粮食安全

After initial success; farms consolidate and export to higher values markets. 在初次获得成功之后，农场开始进行并，向更高利润的市场出口粮食

Depressed markets force subsistence farmers off their land – without jobs. 市场萧条迫使生存型农民离开了土地—并且没有了工作

Farms of the future must be multifunctional.
未来的农场必须是多功能性的

Large farms are not mono-functional because they are large; they are large because they are mono-functional. 大农场的单一功能性并非因其面积大；而是因为它们是单一功能的，所以面积才大

Mono-functional farms are not sustainable. 单一功能的农场是不可持续的

Today's large farms are not sustainable. 今天的大农场是不可持续的

Small farms are not multifunctional because they are small, they are small because they are multifunctional. 小农场不是因为小才具有多功能性；正因为其多功能性，这些农场才小

Sustainable farms must be multifunctional. 可持续的农场必须是多功能性的

Sustainable farms – farms of the future – must be small. 可持续的农场——未来的农场——必须是小规模的

Multifunctional farms can function in harmony with nature.
多功能农场可以与自然和谐共存

Multifunctional farms must be diverse, individualistic, independent; must function like healthy, living systems.多功能农场必须是多样性的、个体主义的、独立的；必须像健康的生命系统那样运行

Multifunctional farms must respect the bounty and bounds of nature. 多功能农场必须尊重自然的恩惠和界限

Multifunctional farmers must rely on experience, knowledge, and insights. 多功能的农场主必须依靠经验、知识和洞见

Multifunctional farms are management intensive – require less land and capital.多功能农场是集约化管理的——对土地和资本的需求较少

Multifunctional farms (like organic) can produce as much food as mono-functional farms – the challenge in the U.S. is "sustainability", not "productivity." 多功能农场（像有机体一样）能够生产和单一功能农场同样多的粮食，美国面临的挑战是"可持续性"，而不是"生产率"

Small, multifunctional farms provide more quality employment opportunities – more thoughtful, caring farmers. 小规模的多功能农场提供了更有品质的就业机会——更细心、更有爱心的农民

Small, multifunctional farms are the best hope for global sustainability.
小型的多功能农场是实现全球可持续性的最佳希望

In the U.S., intentionally multifunctional/sustainable farmers include: organic, biodynamic, ecological, holistic – a
are committed to ecological, social, economic integrity. 在美国，意在实现多功能性 / 可持续性的农场包括：有
机的、生物动力耕作的、生态的、功能整体性的——所有这些都致力于生态、社会和经济的整体性

These multifunctional farms produce less than 10% of food today; but, one-third of Americans want somethin
different from today's industrial foods. 这些多功能性农场生产的粮食不足10%，但是，三分之一的美国人渴望
获得区别于工业化生产的食品

Globally, small-scale farms produce food for 70% of the world's population. 从全球来看，小规模农场为全球70%的
人口提供了粮食

These farms could double or triple production with multifunctional farming systems: agroecology, nature farming
permaculture. 这些农场可以利用多功能农业系统（农业生态学、自然农业、永续农业）使其产量翻番、甚至
增加两倍

To go beyond food security to "food sovereignty," all people must be ensured a "right" to food; and a right t
protect themselves from economic exploitation. 要想实现从粮食安全到"食物主权"的跨越，就必须确保所有
人都拥有对于食物的"权利"，以及保护自身免受经济剥削的权利

Humanity cannot afford for China to make the same mistakes we have made in the U.S.
若中国步美国后尘，人类将无法承担其后果

To achieve food security and sovereignty, farmers must: 为了实现粮食安全和食物主权，农民必须：

- Produce first to meet the needs of their local communities and sell their surplus.首先通过生产来满足本地社区的需求，并销售他们的生产剩余
- Form food networks with like-minded communities based on relationships of trust.在信任关系的基础上与类似的社区结成食物网络
- Scale-up for economic efficiency, through cooperation, not larger-scale farms, taking care to maintain ecological and social integrity. 通过合作（而不是大规模农场）来扩大规模、提高经济效率，用心维护生态和社会的整体性
- Must maintain a sense of personal connectedness with their customers. 必须与他们的顾客保持人际上的连接性
- Must share a common commitment to care for the earth, others, and themselves. 必须共享一种呵护自然、呵护他人和呵护自身的共同承诺

arms and local-food networks must remain small enough to maintain a sense of personal connectedness within and among communities and a common commitment to sustainability. 农场和地方性食物网络必须保持足够小，以便在社区内部和社区之间维系一种人际上的连接性和对于可持续性的共享承诺

Sustainable farms of the future must be small enough to know and love.
未来的可持续农场必须足够小，以便实现了解和热爱

Wendell Berry writes: If the land is to be “used well,” farmers who use the land must “know it well, must be motivated to use it well, must know how to use it well, and must be able to afford to use it well.” 温德尔•拜瑞写道：如果土地是为了让人“充分利用”，使用土地的农民就必须“充分了解它，必须有动力好好利用它，必须知道怎样好好利用，必须能够承受得起好好利用所需要的付出”

Farmers must tend “farms they know and love, farms small enough to know and love, using methods they know and love, in the company of neighbors they know and love.” 农民必须照料“他们了解和热爱的农场，那些小到可以让他们了解和热爱的农场，使用他们了解和热爱的方法，与他们了解和热爱的邻里一道”

I would add: “producing food for people they know and love.” 我还要加一句：“为他们了解和热爱的人们生产食物”

Farmers can only know a limited amount of land and limited number of people well enough to truly love them. This means both sustainable farms and community food systems of the future must be appropriately small. 农民只能做到对有限面积的土地和有限数量的人群的充分***了解***，并真正热爱他们。这意味着未来的可持续农场和社区食物系统都必须是适度小规模的。

Wendell Berry, “Nature as measure,” in What are people for? (New York: North Point Press, 1990): 206—207.