果树栽培：
巴哈马埃克苏马群岛应用性实地研究报告

CULTIVATING FRUIT:
AN ACCOUNT OF APPLIED FIELD RESEARCH IN THE EXUMA ARCHIPELAGO, THE BAHAMAS

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摘要

该研究以可食用水果生产为对象，是一项更大规模的多年期应用研究项目的一部分，项目探索了景观设计、生态学和设计层面的方法，旨在保护和发扬巴哈马埃克苏马群岛在资源管理、经济发展、社会管理和社会文化等方面的传统，同时，为群岛的未来发展提供可持续的解决方案。其借助专为该项目而设计的实地调查过程，运用人类学和参与式方法，与当地社区、政府、教育者和环境本身建立紧密联系，促进了各方对设计方案和决策过程的了解。在参与数据收集的过程中，市民可以就研究课题进行自我学习，并深入了解所研究的内容和研究方式。这一案例研究表明，审慎的、兼容性强的初步设计十分重要，而参与式方法则可以鼓励和吸引当地社区积极参与到课题调研中。该调查结果将为今后该地区和其他地区更为深入的与食品相关的研究奠定基础。

关键词
群岛；交流；参与；实地调查；果树

ABSTRACT

A study on edible fruit production was conducted as one part of a larger multi-year applied research project exploring approaches to landscape architecture, ecology and design that conserve and celebrate traditions of resource management, economic development, governance, and socio-cultural issues of the Bahamian archipelago of Exuma, while proposing sustainable solutions for the future development of the islands. The project draws on a distinctive fieldwork process, designed for the project, which adapts anthropological and participatory methods to engage with local communities, government, educators, and the environment itself to inform design proposals and decision-making. Participation in the collection of data can mean that citizens educate themselves in the research topic, and get involved in what gets researched and how. This case study demonstrates the importance of careful, inclusive preliminary design and the ability of participatory processes to motivate and entice local communities to actively engage in the topic of examination. The findings should help prepare the ground for more intensive future food-related investigations there and elsewhere.

KEY WORDS
Archipelago; Communication; Engagement; Fieldwork; Fruit Trees

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① “埃克苏马可持续未来”是由巴哈马政府、巴哈马国家信托基金及哈佛大学设计研究生院共同发起的一项生态规划项目。

① A Sustainable Future for Exuma is an ecological planning project in collaboration with the Government of The Bahamas, the Bahamas National Trust, and Harvard University's Graduate School of Design.

前言

作为研究人类及其相互关系的学科，人类学是土地规划进程中一个重要的辅助元素。如果能够更好地理解人与人、人与土地等之间的关系，便能更好地进行景观设计。例如，在伊恩 · 麦克哈格担任系主任的近30年间，宾夕法尼亚大学景观设计与区域规划系的教学即深切融合了地理学与人类学两大学科。可以说，设计的主观层面离不开以土地为中心的地理学及以人为中心的人类学之间的相辅相成。

尽管人类学的研究通常关注人及其相互作用，但如今，人类学家也越来越多地关注于非人类关系的研究。例如，安娜 · 卢恩霍普特 · 程曾研究松茸[1]，丹尼尔 · 米勒在《物质》一书中则对物质实体进行了探究[2]。了解各种关系（包括人类和非人类关系）的人类学方法通常包括民族志，其包含了对这些关系的“深描”（人类学常用术语）。正如人类学家克利福德 · 格尔茨所言：“人类是悬挂在自己所编织的‘意义之网’中的一种动物。”[3]通常，人们需要花费较长的时间来进行实地调查，去识别和分析不同的意义之网。这种实地调查一般通过深入社区，与社区建立信任关系，学习当地语言和社会风俗，并详细记录人们日常生活和自然环境的细节来实现。人类学家可以用文字、速写、照片和影像等手段记录和整理实地笔记。通过参与人们日常生活的点点滴滴，在阅读和回顾实地笔记的过程中，人类学家可能会发现之前被忽略的格局，并发掘其中的潜在关系。引用另一个常用术语来说，他们使“异质同化”。

伊恩 · 麦克哈格在其回忆录中写道，“20世纪70年代中期，有关民族志和人类学的社会科学逐步融入到人类生态规划中……这一发展有助于形成更为明智的决策。”[4]麦克哈格清楚地认识到，得益于人类学，生态和社会理念能够在区域规划中相互交织，使决策更加合理可行。从这个意义上讲，对景观设计师而言，人类学的研究方法比社会学更加适用于规划领域，因为社会学更注重量化的结果。换言之，那些擅于用诗意的语言来授课的人（如麦克哈格），或将世界视为互相联通的生活网络的人，会更加倾向于应用人类学这种不断发展变化的富于冒险性、创造性与开放性的方法。总结而言，我们可以得出一个强有力的论点：人类学家所探究的课题将促成更好的规划和设计。

然而，事实并非总是如此。诚然，针对一个地区中人们的生活、诉求和场地与人类栖居之间的种种关系，人类学显然能够为景观设计提供大量而深入的材料，但这些深入的观察和分析工作着实需要耗费大量的时间。通常来说，除却人类学家进行实地调查所花费的至少一年时间外，调查之后的思考和写作也颇费时日。再者，一些地区面积之大、情况之复杂，超出了单个人类学家所能独自研究的能力范围。鉴于这些原因，尽管人类学的研究方法具有显著的优点，但其仍然难以与设计或规划过程完美融合。

多元的生态

从很多方面上讲，“埃克苏马可持续未来”项目[1]都是对《生态都市主义》[5]一书的回应，且深受费利克斯 · 伽塔利的著作《三重生态》[6]的启发。生态学的研究核心即生物体之间的相互作用及其与环境之间的关系。“生态都市主义”概念提出，除却环境角度，这些关系还可以从审美、经济、政治和感观等角度进行探究。在对城市和景观未来的思考中，必须考虑给定区域的多重生态性。这便引出了一个方法上的问题：如果我们要用更为生态的方式（此处指广义的生态）来进行设计和规划，就必须深入了解给定区域的生态状况。这项研究项目致力于使人类学方法在设计和规划过程中发挥更大作用。在调查过程中，我们提出了诸如“如果让调查人员融入当地，成为集体的一部分，将会带来怎样的结果？”一类的问题。为此，我们采用了在其他文献中曾记录过的协作调查方法——征用52名调查员，每人分别进行为期一周的实地调研。[5]除了以市民社会为中心的实地调查外，我们也鼓励政府、决策者和教育人员参与其中，并组织了小组讨论、研讨会和各种其他形式的教育拓展活动与合作。对于普通公众而言，了解决策是如何做出的，以及由谁来做，是十分必要的。我们发现，实地调查远不只通过观察就可以完成，因为被调查的集体中也包括设计师，他们也对项目进行了思考并参与了实施。在这个充满了主观意识的空间内，我们可以找

到更多机会去发现或感受场地的生态。本文主要介绍了该项目繁杂调查过程中的其中一个方面——一个以生长在埃克苏马岛屿和岩礁上的水果为核心的参与式社会研究项目。

巴哈马的食品

通过实地调查，我们很快发现，在过去的几十年间，巴哈马居民与食品相关的态度和行为发生了重大变化。在宏观经济因素的影响下，由于与美国市场的来往愈发亲密且深入，进口食品的成本大幅下降，大量的加工食品由此引入，导致本地食品产量大幅降低。[2]（图1）

伴随这一趋势，居民在食品选择上也发生了重大变化：超过四分之一的人口每周消费两次及以上的快餐，且其中半数人不食用推荐每日摄取的新鲜农产品。[3]如今，70%的巴哈马人面临肥胖或超重问题，因此，发起倡议帮助巴哈马改善健康和社会现状已刻不容缓。

埃克苏马地区的状况更是如此。这是一个由约365个星罗棋布的岩礁和岛屿组成的群岛，位于繁华喧嚣的首都拿索东南方向约56km处。过去，埃克苏马人得到国家扶持的机会有限，因而长期严重依赖以家庭为中心的自给自足的粮食生产。[7]但目前而言，旅游业及其相关行业不断兴盛，进口食品的获取亦十分便捷，这大大削弱了自给农业和渔业的发展。在过去十年中，埃克苏马的人口翻了一番，迅猛的发展使得这个曾经“沉睡”的地区转变成为了国内成长最快的地区之一。[4]（图2）

当意识到这些挑战之后，来自巴哈马政府、巴哈马国家信托基金的代表，以及埃克苏马的农民、企业家、教育工作者和社区领导代表等，应邀参加了在拿索举行的为期三天的研讨会及在埃克苏马首府乔治镇举行的为期两天的研讨会。研讨会意在就群岛的前景进行跨学科的讨论。尽管这些不同的群体在利益和目的方面往往存在冲突，但其在日常食品问题上达成了共识。研讨会的其中一项活动是要求与会者在会前提交一张自家冰箱的照片。这些照片虽然令人为之一惊，但似乎又在意料之中：冰箱里满是加工食品，而新鲜食物少之又少。随后与会者就照片展开讨论，分析其所食用的食品及这些食品的来源。通过讨论，我们可以清晰地发现，在巴哈马的食品中，进口食品所占比重已超过98%，因而食品安全问题及巴哈马农业和园艺业的衰落问题尤需关注。而后，与会者被要求以6人左右为一小组，一同列出当超市还未出现时，其祖父母一辈所食用的食品（主要来自社区和自家后院）。通过罗列清单，与会者表示有很多食品都“被遗忘了”，因为它们已不常出现在自己的日常食谱中。随后，与会者列出了其父母所食用的食品，同时一并思考这两个清单与其通常消费和储存在冰箱里的食物有何不同。结果显而易见：与会者所摄入的新鲜农产品远不及老一辈人多，且食用的多是经过高度加工的食品或速食食品。人们把饮食习惯的改变归因于冰箱的引进，此外，自20世纪70年代群岛电气化之后，当地食物栽培的普遍减少也是导致这一结果的原因之一（图3）。研讨会的最后一项活动要求与会者列举清单，或推测其子孙会食用哪些食品，以此来大致畅想巴哈马下一代理想的饮食习惯。在这项活动中，城市居民和海岛居民的想法存在着明显的差异。拿索人预见的未来充斥着更多的加工食品（但其称之为“健康的”加工食品），而埃克苏马人预见的未来则充满了新鲜水果、蔬菜和鱼类。尽管有所不同，但两者都期望子孙后代大幅增加新鲜水果和蔬菜的摄入量。

这些愿望的核心在于呼吁重振本地食品生产，尤其是栽培更多的果树。实际上，在研讨会期间，由巴哈马公共卫生专家、统计学者、农业部官员及景观设计师（笔者之一）之间展开的讨论即引发了特别关注。人们由此进一步认识到果树不仅是一种物理存在，也是一种感官存在，它们不仅可以开出绚丽的花朵、散发芬芳的气味，更能够提供一系列生态系统服务。除提供营养来源以外，果树亦能够极大影响建成环境的外观和质量。

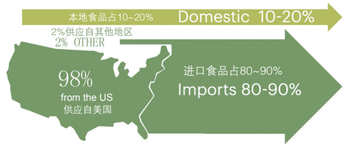
更为重要的是，水果是当地林林总总的社会政治、生态和文化现象的缩影。例如，在巴哈马广为传颂的歌曲和俚语中，人心果通常代表美好的事物，经常被提及的还包括椰李和海葡萄等蓬勃生长于群岛极端干燥和盐化土壤之上的其他水果。经常出现于国家独立日等庆典活动中的当地传统菜肴和标志性的甜品也往往离不开水果。水果不仅具有食用价值，也可制成医药、染料、纤维制品等。人们定义及利用水果的方式均受多重相互关联的复杂因素影响，包括传统文化和宗教、健康、价格、家庭影响及毗邻耕地与否等。因此，水果也是社会和自然构建的体现，它反映了居民的个人偏好，及其与陆地、海洋和社区之间显著、微妙而又错综复杂的联系。

本文记述了一个参与式研究项目，旨在更好地理解埃克苏马人对待食品（特别是水果）的普遍态度和价值观。项目所采用的方法意在避免社会排异现象，激发成长于不同背景之下和拥有不同教育背景的居民对于这一话题的积极性、兴趣和创造力。该项目的研究方法旨在实现两个目标：首先，检验在短时间内和较大地理区域跨度下，沿多条本地调查脉络收集信息的方法是否可行。其次，鼓励当地居民广泛贡献、积极参与，由此获取食品与社会之间因相互作用而产生的数据。换言之，即吸引居民踊跃提出最为相关的问题，从而使数据收集过程更加自然且具有启发性。该目标围绕居民对水果的谈论展开，通过与生态和生物气候系统相结合，意在提供基于设计的解决方案，以畅想在该地区的自然和文化空间中种植果树的前景。

参与式研究：一种方法论

在完成对巴哈马野生水果和果树栽培的文献综述后，我们通过电话远程调查，了解了当地的主要人员、组织和机构，并建立了初步联系，同时与参加哈佛大学举办的研讨会的人员相接触。这一过程让我们获取了更多有关埃克苏马的社会地理信息。随后，我们设计了一个名为《水果工作手册》的双页文件集。印刷手册这一媒介可吸引人们——尤其是那些不具备计算机和互联网服务的社区中的居民参与到研究之中。该手册简要概述了志愿者应当如何去收集和记录人们所感兴趣的与水果有关的问题，他们可以依据自己的个人经验填写，抑或询问邻居、朋友及家人。手册中广泛列举了可能谈及的话题，比如“描述你对某种水果的好/恶”。在这些列举的话题一侧，附有从文献综述中汇编的当地水果品种清单。手册明确指出，志愿者有权决定自己所要记录的内容——“记住，这个工作手册完全由你来打造”。此外，手册还提供了空白页，可方便记录自发补充的数据。这一举措的目的是最大限度地减少结构化研究项目中的典型限制。这种灵活的研究方法背后的理念是要囊括所有参与者的知识和兴趣所在。

在明确了与各社区领导、非营利组织和政府官员等主要团体的合作之后，笔者开启了埃克苏马之旅。本次选取的调查地点包括斯丹尼尔岛、黑角岛和小农夫岛三处半农村半城市化的小岛，其长度从不超过1.6km到十余千米不等，总人口约500人。第四处是大埃克苏马岛，这是该区域中面积最大（长约64km）、城镇化水平最高的岛屿，总居民数逾3 000人。首先，我们招募了来自主要机构的志愿者，告知他们分发《水果工作手册》



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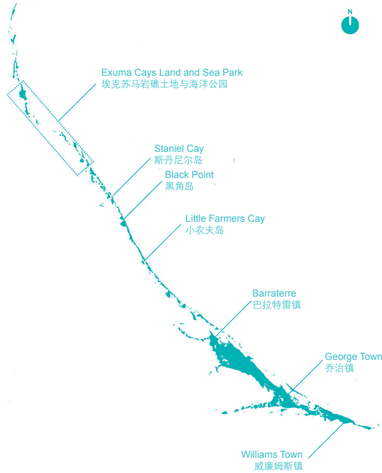

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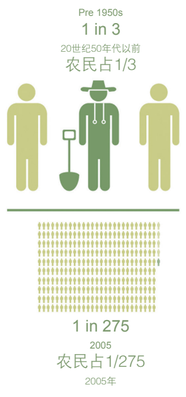

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② 资料来源：巴哈马统计局（2009年）
③ 资料来源：巴哈马卫生部（2011年）
④ 资料来源：巴哈马人口和住房普查（2010年）

1. 巴哈马食品进口发展趋势。在巴哈马所需的食品中，80%~90%均依赖进口，其中98%来自美国。
2. 埃克苏马地图
3. 巴哈马农民所占比例变化。20世纪50年代以前，三分之一的巴哈马人为农民。2015年，仅有1 200人为农民。

1. Food imports into The Bahamas. The Bahamas imports between 80% ~ 90% of all of its food needs, 98% of these imports are from the US.
2. Map of Exuma
3. Who Farms in The Bahamas. Before the 1950s, a third of all Bahamians were considered farmers. In 2005, the country had about 1,200 people classified as farmers.

的目的——通过多条调查脉络收集和获取水果与社会之间因相互作用而产生的数据。2015年3月，在不到两周的时间内，来自这四个地区的300余名志愿者参与到了项目之中。

在三座小岛上，志愿者有两天时间反馈和记录工作手册中的数据，而在大埃克苏马岛，志愿者可在5天之内提交信息。总而言之，我们的志愿者群体涵盖不同的年龄、职业、性别，既有常住居民，也有短居于此的居民。这是一项匿名调查，志愿者们无需在手册上署名。为整理文本数据，归纳出初步的话题，我们将数据导入Excel电子数据表格中，并注明所调查场地的位置。对于数据趋势的进一步分析则在实地调查结束之后进行。

研究结果

采用灵活且非规定性的方法来收集数据，使我们得以一览埃克苏马地区与水果最切实相关的问题。志愿者在手册中的空白页上分享的与水果相关的习俗、回忆或趣事，反映了他们对特定水果的态度及联系。在收集到的所有话题中，最常见的是水果的药用价值。具体而言，大家普遍认为刺果番荔枝能够有效治疗复发性恶疾。鳄梨和木瓜也常被认为具有同样的药效。因此，水果的价值在很大程度上取决于其被意识到的疗愈特性。此外，大部分志愿者在描绘上述水果的药用价值时，不但提到了果实，还谈及它们的叶、根和茎。例如，很多人提到，鳄梨树叶制成的茶可发挥其最理想的治疗功效。而另有一些志愿者只提及用叶子冲泡成茶的药效，而完全忽视了植物的果实。（图4）

正如每座岛屿或岩礁都有其独特的社会和物质形态，其上的水果也都蕴含着不同的含义与价值。当志愿者具体描述他们对果树种植的期许时，这些差异尤为显著。很多志愿者会因为某一种水果的味道、颜色或气味，而在手册所列清单中将其圈出，并附言“我希望种植它”。而另外一些志愿者的期许则超越了感官的偏好，更多地关注于当地的发展和经济的增长。例如，在大埃克苏马岛，十余名志愿者期望种植马米果，其部分原因是，随着旅游业的兴起，土地的开垦使得此类果树日益减少。这一发现表明，志愿者对种植某种果树的期许可能与当地的土地利用趋势和所在岛屿/岩礁的居住模式相关。

此外，研究发现来自三座小岛的志愿者更倾向于指出或分享有关野生、可食用水果的信息。而在城镇化程度相对较高的大埃克苏马岛，这种趋势并不明显。在城镇化对居民与野生水果的亲密的日常接触产生的影响的调查中，尤其值得注意的是，记录结果中所描述的野生水果，有一部分并未出现在手册所提供的水果清单中。这一结果肯定了野生水果对三座小岛居民的重要意义，同时也表明所提供的清单既不是手册的关键组成，亦不是获取与水果相关数据的要素。

通过水果的视角，一些与当地经济发展相关的细微差别渐渐浮现。举例而言，从一名志愿者对其获取果树和园艺工具这一过程的描述中，我们可以窥见黑角岛的经济特性：“我经常在乘飞机前往拿索购物或看病的同时，顺便购买园艺用品……这样既方便又便宜。”这是首都城市资源集中化现象的一个缩影，不仅只有黑角岛居民是这样，对于该地区大部分居民而言都是如此。拿索是巴哈马的商业贸易中心，这里的商品和服务更实用且更易获取，而边远地区的社会经济则相对碎片化。

4 © Liat RACIN and Gareth DOHERTY

4. 孩子们正在分享他们关于当地水果的价值观与相关知识

4. Children sharing local values and knowledge on fruit

讨论

城市植树规划的设计、实施和管理涉及广泛的利益团体和巨大的利益[8][9]。参与式进程可以帮助我们从环境管理和规划中认识到其中的社会、政治和经济因素。兼容并蓄的过程可以启发和激励居民积极参与研究，投入到文化教育和日常科普教育中。通过让居民分享和记录其自身具备的与各话题相关的知识、看法和行为，我们可以收集关于树木的生态要素及其“社交生活”的丰富数据。如若公民成为了果树种植项目的核心并在食品问题上提高了话语权，这些元素便构成了设计者所需要着力探索的不可或缺的组成部分。

多项研究表明，参与式项目不仅可以扩大参与者的知识面，也可提高其系统地提出相关问题的能力。[10]~[12]此外，当参与者从其家庭和社区收集数据时，这种方法还提供了代际互动和学习非科学性知识的机会。

在实地调查中我们观察到，每个调查区域中均出现了通过代代相传的方式来传播与水果相关的文化知识的现象。究其原因，在埃克苏马群岛的部分地区，老一辈人主要依靠自身能力去生产和采摘水果，以满足自我需求。如今，许多年长的居民和年轻的家庭成员生活在一起。代际协作促进了对传统知识的挖掘和梳理，并成为我们数据收集过程中的资料来源。沿着这样的思路，我们的一名志愿者写道，他/她的祖母用罗望子果来制作罗望子糖——据说是“电力时代来临前”的一种常见甜点。这一传播方式也提高了社区的参与度，减少了老年居民在独立记录文件数据时的障碍。

概括而言，该项目首次尝试推动研究人员、决策者和该地区的其他活跃群体了解有关埃克苏马群岛果树的主要发展趋势和社会认知。因此，这项研究不仅为今后更多涉及水果及其相关主题的统计型或系统性研究奠定了基础，也会令更多的果树种植项目受益。项目所提出的果树种植设计建议和相关配置亦可适应不同类型的农业用途，同时满足其象征意义和文化细节等。（图5~7）

树木应种植在何处

在岛国巴林王国，笔者曾目睹了椰枣树的分配种植过程。椰枣树种植于一个动乱频发的社区中，这里此前刚刚经历过政治意见相左的双方间的暴乱。而双方均视椰枣树为统一的象征。为此，当地的种植方案专门提议在村庄中心种植一株具有象征意义的大椰枣树，以呼吁人们共创民族团结，提升民族凝聚力。此外，另有59株小椰枣树散布于附近社区的私人花园中。

在另一个位于巴西的案例中，人们实施了一个名为“涵养优质水源”的项目。为减少世界第二大水电大坝伊代普水电站对环境的影响，人们开始在与其毗邻的社区中种植树木。这些跨越巴西和巴拉圭边境的社区往往面积极小。笔者实地探访了其中一个社区，这里有一位学者，经常利用课余时间与家庭境遇不佳的孩子们一同种植树木。当被问及如何决定在何处种植树木时，学者回应道，“问题在于谁真正热爱这些树木。”⑤这位学者已经认识到，树木种植在哪里主要取决于人们是否会对它们倾注爱心，唯有注入爱心，它们才能更加茁壮地成长。2014年，当笔者探访该社区时，这里已经种植了4 000余株树木。⑥

在上述两个方案中，树木种植地点的选取均考虑到公众利益，且均依赖于普通居民的喜爱与关切。此外，两个方案的成功施行均取决于私有土地对树木种植的支持。在公共区域种植树木经常面临土地资源匮乏的挑战，若将树木从中移出，转交于关爱它们的个人手中，那么它们既能受到悉心照看，亦能供其他居民观赏。（图8，9）

以上这些描述意在提供一种视角，从中我们可以一探将公共和私有领域中的果树进行整合的前景。在数据收集与分析的基础上，我们将其中有关水果和相关食谱的部分制成日历进行分发，期望通过各种可能施行的教育、农业和烹饪项目，为居民提供接触农业的机会。日历充分利用了水果的优势，2015年版的“水果种植”日历每周会推荐一种不同的水果；2016年版的“烹饪用水果”日历则为居民提供了从社区中收集的各类食谱。

本文的目的不在于提供一个具体的设计方案，而是初探一种以水果为核心的未来生活，个人及社区团体均可参与其中。我们获悉，在这种广泛参与过程的启发下，迄今为止，由个人和团体种植的树木已超过2 000株。诚然，这类方式亦存在不足之处，例如，设计机构的主动性被大大削弱，他们需

⑤ 数据来源于2014年8月在巴西托莱多所做的实地调查。

⑥ 请访问http://www.cidadessustentaveis.org.br/boas-praticas/florir-toledo，获取更多有关该项目的信息。

要更多地考虑私人业主的个人喜好。尽管本文为树木种植提供了些许建议，但最终只是把问题转嫁给了私人业主。因此，在个人偏好与公众利益之间寻找平衡是此类方式所面临的主要挑战。

结论

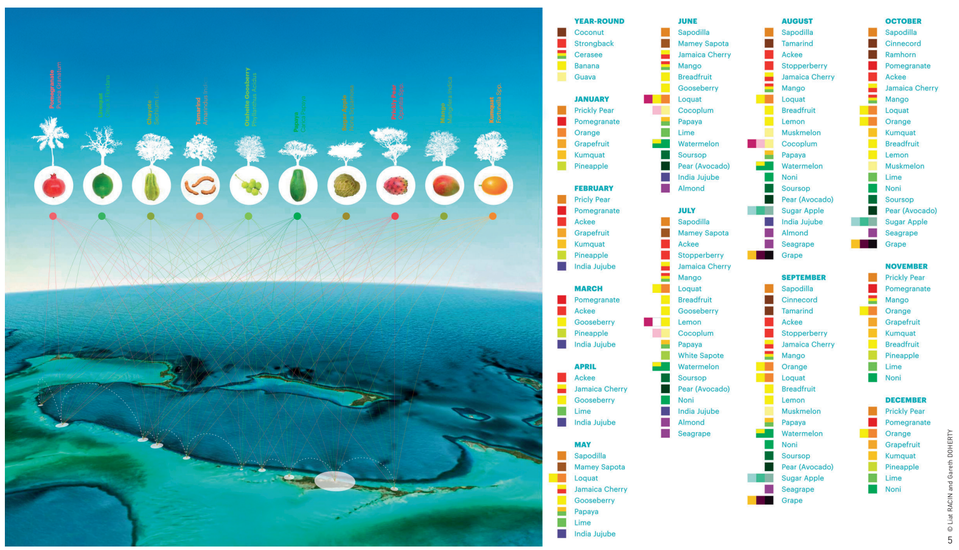
这项调查研究阐释了与水果及果树种植有关的理念与价值观的复杂性。它通过有效的资源和时间利用，初步描绘了普遍存在于埃克苏马群岛的水果与社会之间的相互关系。利用手册收集数据的这一研究方式可指导针对该地区水果种植的其他后续研究，以匹配和迎合当地社区的偏好。该水果项目是以批判性人类学方法为基础的大型参与式项目的一部分。针对社会生活的兼容并蓄的、参与式的研究方法——主要通过倾听、交谈和信息分享——为我们呈现了一种极为有效的工具，在该地区生活方式和饮食习惯迅速变化的情况下，其可围绕食品协助建立或重建与传统相关的知识、习俗和实践。**LAF**

致谢

感谢以下人士为该项目所做的贡献：莫森·莫斯塔法维担任项目负责人；加雷斯·多尔蒂担任项目联合负责人；保罗·中泽协助完成了项目早期对食品的研究；戴恩·卡尔森、罗伯·多里奥、汉斯·赞德和彼得·朱罗韦斯特绘制了文中的多张图片。

5. 畅想未来的种植策略

5. Developing prospective planting strategies



Introduction

As the study of people and their interactions, anthropology can be a useful complement to the shaping of the land. A better understanding of relationships between humans and humans, humans and the land, and so on, can lead to better landscape architecture. For example, the Department of Landscape Architecture and Regional Planning at the University of Pennsylvania under Ian McHarg's almost thirty-year chairmanship fused geography, on one extreme, with anthropology on the other. One might say that the projective aspect of design entails the interdependent relationship between geography (land-centric) and anthropology (people-centric).

Anthropology can typically be understood as the study of people and their interactions, however anthropologists are today often to be found studying non-human relationships too. Take for example, Anna Lowenhaupt Tsing's work on the matsutake mushroom[1] or Daniel Miller's study on material objects in the book, *Stuff*[2]. Anthropology's methods for understanding relationships (human and non-human) will usually consist of ethnography, which involves a "thick description" of a particular set of relationships, to use the oft-quoted phrase. Indeed as anthropologist Clifford Geertz puts it: "Man is an animal suspended in webs of significance he himself has spun."[3] Usually, an individual will spend an extended period conducting fieldwork trying to identify and analyze these various webs of significance. This fieldwork will typically involve living within a community, establishing trust with that community, learning the local language and social customs, and carefully describing details of people's daily lives and that of the physical environment too. Anthropologists may record and organize field notes with words, sketches, photographs and videos, among other means. Through this participation in the details of everyday life, and in the reading and re-reading of field notes, anthropologists come to understand patterns and unearth relationships that might have before gone unnoticed. They, "make the strange familiar" to use another oft-quoted phrase.

Ian McHarg writes in his memoirs that, "By the mid 1970s the social sciences of ethnography and anthropology were increasingly being integrated into human ecological planning… and this development held great promise for better informed prescriptions."[4] McHarg clearly saw benefit from anthropology in terms of leading to better informed decisions that meshed ideas of ecology and communities in regional planning. In this sense, anthropology may have been regarded as an approach for landscape architects in planning field than sociology since sociology can be more quantitative results-oriented. In other words, somebody who teaches with poetry (such as McHarg) or describes the world as an interconnected living web, might prefer the speculative / creative / open-ended approach that is constantly changing and evolving. In any case, there is a strong argument to be made that the topics anthropologists unearth can lead to better planning and design.

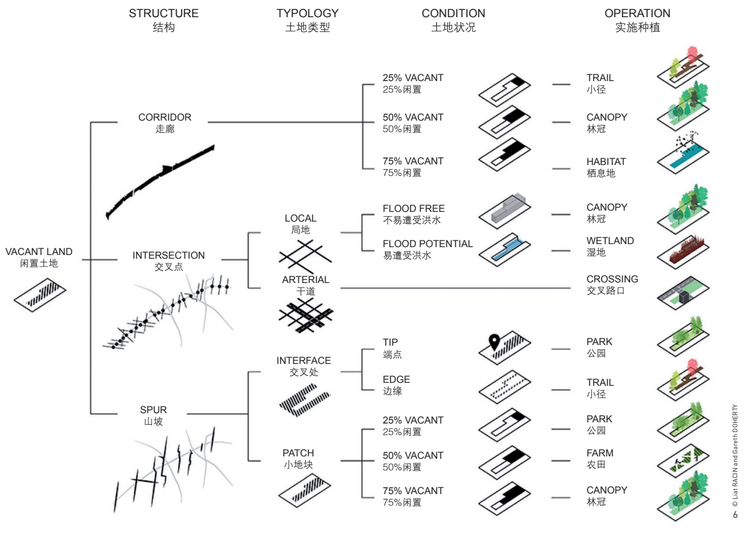
However, in practice this has not always been the case. While anthropology clearly has much to offer landscape architecture by providing greater insight into how people live, their aspirations, and the myriad relationships between a site and human inhabitation, its deep observational and analytical work takes a long time. In addition to the sole anthropologist typically spending at least a year in the field, a period of reflection and writing is also required. Also, many sites are larger and more complex than a single anthropologist can manage to study alone. For these reasons, anthropology has been difficult to successfully integrate in design or planning processes despite the obvious advantages that would follow.

Plural Ecologies

The Sustainable Future for Exuma project① was in many respects a response to *Ecological Urbanism*[5], and inspired by Felix Guattari's *The Three Ecologies*[6]. Ecology, at its core, is the study of the interaction of organisms with one another and their environment. Ecological urbanism puts forth that such relationships can be aesthetic, economic, political, and sensual in addition to the environmental. In speculating on urban and landscape futures, it is essential to consider the multiple ecologies of a given area. This raises a question of method: If we are to design and plan in ways that are more ecological — using ecology in this broad sense of the word — then we need to find ways to deeply understand the ecologies of a given area. This research project sets out to adapt anthropological methods to be more useful within a design and planning process. We asked questions including, "what if the individual fieldworker becomes part of a collective?" The collaborative method we developed — with fifty-two researchers conducting fieldwork for a week each — is documented elsewhere.[5] In addition to the collaborative fieldwork centered on civil-society, we engaged with government, decision makers and educators through focus groups, workshops, and various other forms of educational outreach and collaboration. It is essential to know how decisions are made, and by whom. We learned that fieldwork was more than observation, since the collective also included designers, thinking about and initiating projects. It is within this projective space where various opportunities can arise to discover, or sense, the ecologies of the land. This paper sets out to describe one aspect of this large process of engagement: a participatory social research project centered on growing fruit on the islands and cays of Exuma.

Food in The Bahamas

Our field research quickly revealed that during the past few decades a major change in residents' attitudes and behaviors toward food has occurred in The Bahamas. Macro-economic factors, notably the proximity and access to the US market, have resulted in a significantly reduced local production of food in favor of cheaper imports, including a large amount of processed food.② (Fig. 1)



6. 种植设计方案

6. A planting design protocol

② Source: The Bahamas Department of Statistics, 2009.

③ Source: The Bahamas Ministry of Health, 2011.

④ Source: The Bahamas Census of Population and Housing, 2010.

Accompanying this trend has been a considerable change in residents' food-related decisions. More than a quarter of the population consumes fast food two or more times per week and, about half of them do not eat the recommended daily serving of fresh produce.③ With seven out of ten Bahamians now obese or overweight, never has there been a more important time to develop initiatives that help improve the current health and social situation in the country.

This is especially true in the district of Exuma, which is an archipelago comprising of about 365 scattered cays and islands located about 35 miles southeast from the nation's bustling capital city, Nassau. Traditionally, Exumaians have had limited access to state services and have therefore continued to rely heavily on subsistence, family-oriented food production.[7] Subsistence farming and fishing, though, is now a diminishing pursuit in the face of tourism, tourism-related enterprises and obtainable food imports. Exuma's population has doubled in the last decade, and the ongoing development has effectively converted the "sleepy" district into one of that nation's fastest growing ones.④ (Fig. 2)

Recognizing these challenges, representatives from the Government of The Bahamas, the Bahamas National Trust, as well as farmers, business owners, educators and community leaders from Exuma were invited to participate in a 3-day long workshop in Nassau, and a 2-day long workshop in George Town, the capital of Exuma. The aim of the workshops was to generate a cross-disciplinary discussion on the future of the islands. These groups, which often have conflicting interests and agendas, found common ground around everyday issues of food. For one activity, participants were asked to submit a photograph of their refrigerators before the workshop. These images were startling, but not unexpected: a proliferation of processed foods, and very little fresh foods. Participants then discussed these photographs and analyzed not just what they eat, but where the food comes from. These discussions clearly reflected the fact that over 98% of food in The Bahamas is imported, which simultaneously raised concerns over food security as well as the decline of Bahamian agriculture and backyard gardening. Then, participants were asked to work together in small groups of about 6 people to list the foods that their grandparents ate when supermarkets did not exist and foods largely came from backyards and community. On the list were many fruits which participants had reportedly "forgotten about" since they are not a part of their own regular diet. Participants went on to list the foods their parents ate, and then reflected on how both lists differed from the food they themselves typically consume and store in their refrigerator. The result was clear: participants reportedly ate less fresh produce than the older generations, and ate more foods which were highly processed and could be eaten quickly. They attributed the change in dietary habits to the introduction of the refrigerator, which followed the electrification of the islands in the 1970s and a general decline in local food cultivation (Fig. 3). The final part of the activity entailed broadly describing the ideal dietary habits for future generations in The Bahamas through listing and / or speculating on the foods their children and grandchildren will eat. Here, there was a difference between the city-dwellers and the island-dwellers. Nassauvians saw a future filled with more processed foods (albeit "healthy" processed foods), and Exumians saw a future filled largely with fresh fruit, vegetables and fish. Nonetheless, in

both cases, their wishes called for a dramatic increase in the intake of fresh fruits and vegetables.

Central to these wishes was the call to reinvigorate local food production, and specifically to cultivate more fruit trees. In fact, during the workshop, a conversation between a Bahamian public health specialist, a statistician, an official from the Ministry of Agriculture, as well as one of the authors, a landscape architect, especially raised awareness for that since fruit trees can have a strong physical and sensual presence, providing colorful flowers, fragrant smells as well as a host of ecosystem services, they also radically impact the appearance and quality of the built environment in addition to providing a source of nourishment.

In particular, fruit epitomizes a wide-range of local socio-political, ecological and cultural phenomena. Bahamian hit songs and slang, for example, mention the Sapodilla fruit, commonly referred to as dilly, and many other fruits including cocoplum and seagrape, which thrive in the archipelago's mostly dry and salty soils. Traditional local cuisine and trademarked desserts often incorporate fruit and are used in such celebratory events as the National Independence Day. The value of fruits extends well beyond food to medicine, dyes and fiber and more. The ways in which fruits are conceptualized and used are all influenced by complex array of often inter-related factors that may include traditional culture and religion, health considerations, price, familial influences and proximity to arable land. Therefore, fruit is at the same time a social and natural construct that reflects significant and subtle complexities associated with the personal preferences of the residents and their connection to land, sea and the community.

This article describes a participatory research project that constitutes one small step toward better understanding the attitudes and values of Exumaians toward food in general and fruits in particular. The methods employed aimed to prevent social exclusion and to increase the motivation, interest, and creativity of residents around the topic in different contexts and educational environments. The project's research approach aimed to achieve two goals. First, to examine a method for gathering information along multiple lines of local inquiry in a short time frame and over a large geographical area. Second, to extract data on food-societal interactions using the extensive contribution and active participation of locals. That is, to entice residents to enthusiastically generate the most relevant issues, thus allowing for a more spontaneous and revealing data-gathering process. The goal is centered around the idea that residents' discourses around fruit, coupled with the integration of ecological and bioclimatic systems, may provide design-based solutions to address the prospects of planting fruit trees in natural and cultural spaces throughout the region.

Participatory Research: A Methodological Approach

Following a literature review on wild and cultivated fruits in The Bahamas, a remote search was conducted by phone in order to identify and establish initial contacts with key local persons, organizations and agencies as well as connecting with participants who attended the workshops held at Harvard University. These connections also enabled us to source additional pertinent socio-geographical information about Exuma. The next step involved the creation of a two-page packet entitled "Fruit Workbook." The medium of the printed packet was chosen to entice and facilitate participation, especially for communities with limited access to computers and internet service. The packet itself outlined brief instructions that explained how volunteers could collect and record in it any fruit-related issues of interest either based on their own personal experience and / or sourced from neighbors, friends and their family. Broad-based examples of possible topics to address were provided, for example "describe your likes / dislikes for a certain fruit." Adjacent to these examples was a list of local fruit varieties that were compiled from the literature review. It was made clear in the packet that what participants choose to write about was completely up to them: "Remember, this workbook is whatever you want it to be." An empty page was provided for data entry. The empty space was meant to spark spontaneous data input. The aim was to minimize constraints typical to more structured research projects. The philosophy behind this flexible method was to include the knowledge and interests of all participants.

After securing the cooperation of key entities including various community leaders, non-profits and government officials, a trip to Exuma was taken by one of the authors. Three of the chosen field sites — Staniel Cay, Black Point, and Little Farmer's Cay — are small rural-to-semi-urban cays that range less than a mile to a couple miles in length with a total of population of about 500. The fourth site was the district's largest (about 40 miles long) and most urbanized island, Great Exuma, with a total of over 3,000 residents. Initially, volunteers from key entities were enlisted and informed about the aim of disseminating the "Fruit Workbook," which was to gather and extract data on the interactions between fruit and society along multiple lines of inquiry. In less than two weeks in March 2015, over 300 volunteers from the four locations were enlisted to participate in the project.

On each of the small cays, participants were allotted with two days to respond and record data in the workbook, while on Great Exuma participants had up to five days to submit their input. As a whole, the cohort included people of different generations, occupations, genders as well as year-round residents and second-home owners. For the sake of anonymity, volunteers were not expected to write their names on the packets. To organize textual data and detect the emergence of preliminary themes, data was recorded into an Excel spreadsheet while noting the specific field location. Additional analysis of trends was conducted upon return.

7. 埃克苏马群岛中斯丹尼尔岛、黑角岛和小农夫岛的种植策略。

7. Planting strategies for Black Point, Little Farmers Cay and Staniel Cay, islands of Exuma.

Results

The flexible, non-prescriptive technique for curating data created a window from which to view the fruit-related matters of most relevance in the district of Exuma. By filling the empty page provided in the packet, volunteers shared the customs, memories, jokes or parodies that accompanied and reflected their attitude and association with certain fruits. The most prevalent fruit-related theme that weaved through the packets was the medicinal one. Specifically, the idea that soursop could effectively remedy serious illness which was recurrent. Avocado and papaya were also frequently mentioned in the same regard. The value of fruits was therefore tied heavily to their perceived curative properties. Furthermore, the great majority of volunteers who discussed the medicinal benefits of the above mentioned fruits did not solely allude to the fruit, but also to the leaves, roots and stems of the plant. For instance, many shared ideas of how brewing a tea prepared from the leaves of the avocado tree was the best way to extract the desired therapeutic benefits of the plant. In some cases, volunteers only gave mention to brewing tea leaves with a complete disregard to the actual fruits of the plant. (Fig. 4)

Just as each island and cay is quite unique in social and physical form, every island had its own story to tell about the meaning and value of fruits. This became especially clear when volunteers specifically described their desires for fruit plant cultivation. Many circled a particular fruit from the list and stated in the space adjacent to it: "I want to grow it" because of taste, color and / or olfaction. When going beyond their sensory preferences, though, many linked their desires to broader concerns about local development and economic growth. On Great Exuma, for example, about a dozen volunteers explained how their desires for growing mamey sapote partly stemmed from a concern about the loss of this fruit tree species in lieu of recent tourism-related land clearing. This finding suggests that volunteers' desirability for cultivating certain fruit trees may intersect with local land-use trends and patterns on their island or cay of residence.

In addition, on the three small cays there was a tendency to identify and share information about wild, edible fruits. This trend was less prevalent on the relatively urbanized island of Great Exuma. While hinting to how urbanization may impact residents' intimate, day-to-day contact with wild fruit, what is particularly noteworthy about this finding is that some of the wild fruits discussed were absent from the list of fruit trees provided in the packet. The departure from the list affirms the significance of wild fruits for residents on the three cays. It also suggests that the list was not a crucial component of the packet and for extracting fruit-related data.

Through the lens of fruit, some nuances associated with local economies rose to the surface. For example, a glimpse of Black Point's economic characterization was illuminated when one volunteer there described the processes of acquiring their fruit plants and gardening supplies: "When I fly to Nassau for shopping and doctor visits, that's when I buy all my gardening things… it's easier and cheaper that way." The comment suggests the epitome of the centralized capital city for Black Point residents in particular and for the district's residents in general. Nassau is the country's center for commerce and trade. The greater availability and accessibility of goods and services in Nassau reveals the relative socio-economic fragmentation of the outlying district.

Discussion

The design, implementation and management of urban tree planting schemes involve a broad range of stakeholders and interests.[8][9] Participatory processes can recognize the sociological, political and economic factors in environmental stewardship and planning. Processes of inclusion enabled and motivated residents to actively participate in research and engage in cultural and informal science-based education. By enabling residents to share and record their own knowledge, attitudes and behavior relating to the subject matter, a rich set of data was collected on the ecological elements and "social life" of trees. These elements comprise an integral component of what designers should seek to explore if citizens are to figure centrally in fruit tree planting projects and emerging discourses around food.

Several studies have affirmed that participatory projects may expand participants' knowledge and increase their ability to frame relevant questions scientifically.[10]–[12] What is more is that when participants collect data from their families and community, the methodology also provides opportunities for intergenerational interaction and non-scientific learning.

In every field site, it was observed that there was some spread and flow of culturally transmitted knowledge on fruit from older to younger generations. This may be partly so because in Exuma, older generations had once depended largely on their own capacity to produce and gather fruit to meet their needs. Many of these older residents now live together with younger family members in the same household. Inter-generational teamwork helped to tap and funnel traditional knowledge sources into the data gathering process. Along this line, one volunteer wrote that his / her grandmother used to make tamarind candy from the tamarind fruit, a reportedly common dessert "before the days of electricity." It also amplified community participation, reducing barriers associated with older residents' ability to record data independently in packet.

Broadly speaking, the project represents a first foray to inform researchers, policy-makers and others active in area on the main trends and societal perceptions of fruits in Exuma. This research therefore lays the groundwork for more statistical or scientifically driven studies on fruit and related subjects in the future, not to mention more design driven fruit planting schemes. Proposed fruit tree planting design recommendations and related configurations can respond to different types of agricultural uses, symbolic meanings and cultural details, among other factors. (Fig. 5~7)

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8. 卫生所效果图。果树上结出的水果可在社区中售卖。

8. Renderings of a health clinic. Fruits from the trees could be sold in the communities.

Where to Plant the Trees

In the island Kingdom of Bahrain, one of the authors witnessed a date palm distribution process. Date palms were distributed throughout an embattled community which had recently seen riots between two sides of a political divide. The date palm was perceived by both groups as a unifying symbol. In particular, the scheme called for planting one large date palm in the center of the village for its symbolic value. This tree served as a reminder of a cohesive national identity. Then, 59 other date palms, much smaller in size, were distributed in private gardens throughout the nearby community.

Another scheme, in Brazil, was developed by a project called Cultivating Good Water. In reparation for the environmental impacts of the Itaipu dam, the second largest hydroelectric dam in the world, trees were cultivated in nearby communities. These communities which straddled the borders between Brazil and Paraguay, were often very small. One such community visited by one of the authors during fieldwork, had a philosopher working with disadvantaged children after school to propagate trees. Asked how the trees would be distributed, "The question is really who will love these trees," retorted the philosopher.[5] The philosopher had realized that, when it came to the distribution of the trees, if the trees were given to people who would love them, that they were more likely to thrive. At the time of visiting in 2014, over 4,000 trees had been propagated.[6]

In both these schemes, the distribution of trees for the public good, depended on the love and care of private citizens. More than that, both schemes also depended on private land as the host for the trees. By removing trees from public domain, where they are often challenged by lack of resources, and placing them under the direct care of loving individuals, they would be care for, yet still be visually accessible to the public. (Fig. 8, 9)

The intent of these renderings was to offer a window from which to view the prospects of integrating fruit trees into the public and private realm. Data gathered on fruit and related food recipes was also used to create a calendar, which was later disseminated in the hope of providing opportunities for residents to engage with agriculture through various potential educational, agricultural and culinary programs. The calendar celebrates the advantages of fruit: in the 2015 calendar, "Grow Fruit," celebrated a different fruit per week; in the 2016 calendar, "Cook Fruit," provided residents with recipes many of them gathered from the community.

The aim was less to provide a specific design, and more to provide a glimpse into a more fruit-centered future, that could be entered into by various individuals and community groups. To-date we are told that over 2,000 trees have been cultivated by individuals and groups, inspired by this wider engagement process. This format has its limitations, however, in that the agency of design gets somewhat diluted and replaced by the personal preference of the private home dweller. While we did provide recommendations for tree planting, in the end it becomes a matter for the private home dweller. Balancing between private preference and public good is one of the main challenges such an approach can be faced with.

⑤ From field notes taken in Toledo, Brazil in August 2014.

⑥ For more on the project, see: http://www.cidadessustentaveis.org.br/boas-praticas/florir-toledo.

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9. 设想在乔治镇中种植香蕉树的场景

9. Scenario showing banana trees in George Town

Conclusion

This investigation illuminates the complexity of beliefs and values tied to fruit and fruit plants. It captured a preliminary and contextual portrayal of prevalent fruit-societal interactions in Exuma in a resource- and time-efficient manner. The data collected from the packets may provide a useful frame for guiding any subsequent research on growing fruit in the district, and in ways that match and appeal to the preferences of local communities. This fruit project was one part of a larger engagement which built on and critiqued anthropological methods. The social life of the inclusive, participatory research methods — the act of listening, talking and the sharing of information — represents a useful tool for efforts in (re)building traditional knowledge, customs and practices around food, especially in light of the district's rapidly changing lifestyle and eating behaviors. **LAF**

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