IMMIGRANTS AND INCUBATORS – Perspectives On New Entry And The Land-Based New Farmer Training Model.

Prepared by Hugh Joseph for the Colloquium at Yale University, Nov. 2nd, 2012

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Summary: This paper provides an overview of a beginning farmer development process we call a 'land-based incubator'. Most of these initiatives target socially disadvantaged populations, particularly immigrants and refugees in urban areas. The **New Entry Sustainable Farming Project (New Entry)** in Massachusetts was the first such endeavor to serve refugees. A history of its development is included. In recent years, dozen of incubators have spawned nationwide reaching a diverse audience base. Regardless of who they serve, these are complex, ambitious undertakings, and costly to run well. Are they worth it, and what are the alternatives?

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New Entry was one of the first refugee incubator training programs in the US, designed to promote economic opportunity and food security for capable and energetic immigrants who wanted to farm here but lack the initial resources and expertise. We felt that if they were able to produce high-quality crops with limited assistance, some might want to earn a living from farming – in essence, they would be investing the passion and skills they brought from their homelands into new commercial operations here. The initial inspiration to start this initiative came from visiting 120 Hmong families gardening at a Lancaster, MA dairy farm and seeing therein an opportunity for viable commercial farming operations by immigrants.

Immigrants, refugees, and agriculture: Food production is central to human existence. More specifically, farming and food enterprise have historically been fundamental components of the social structures and economic systems of all advanced societies. Indeed, throughout most of the less-developed world today, 'agri-culture' constitutes a significant aspect of the make-up of the overall cultures and way of life of most people. But in the United States and in other more developed countries, during the past century, much of the population has lost its connection to food production, and most agriculture is increasingly concentrated among fewer large-scale producers. As peoples' connections to the land and to their overall food system have diminished,

this has been paralleled by sedentary lifestyles and poor dietary habits, spawning an epidemic in obesity and related chronic diseases such as hypertension and diabetes. As recent immigrants acculturate in the urban areas of the US these trends also extend to them. Unable to access culturally appropriate foods, and removed from the active agrarian lives they led in their homelands, far too many have adapted the poor dietary and lifestyle habits of the majority population.

A melting-pot approach to immigrant acculturation has been integral to our nation's heritage, but this has not been the case with food. The American diet has always benefited by the introduction of new and diverse crops and cuisines. In fact, almost all the produce currently grown in the US came from other countries. Often new crops were introduced by immigrants or refugees as they grew food for themselves and their communities. Then they were introduced to the broader American marketplace. Interest in new foods from around the globe is accelerating with a rapidly-expanding diversification of products being offered by restaurants and food stores. The quality and availability of these foods is best met by producing these foods in the region where people live. This is critical to sustaining diverse food production capabilities throughout the country, and to promoting food security among immigrant and refugee populations by assuring that the quality of foods and access to these products is available in their communities.

Historically, immigrants have been a key to the sustainability and expansion of US farming. Cochrane, in his historical analysis of American agriculture, states that immigration in the last two centuries "... supplied the people needed to settle the great hinterland of America, and to create a highly productive commercial agriculture.... The great migrations of peoples from Europe between 1820 and 1914 literally provided the bodies required to build the industrial and agricultural sectors of the United States economy over that long period" [1]. This trend has continued throughout the past century as well. Today, although the majority live in urban settings, a large share of these immigrants, particularly refugees, have an agricultural heritage. These new residents are well suited to become the next generation of farmers in many parts of the US. They have shown strong interest in producing crops to meet their own economic and dietary needs and to help feed their communities.

For decades, this avocation was largely not encouraged in the United States, since most refugees were settles in urban areas, and farming was on the decline. Yet secondary migration since the

[1] Cochran W.W. The Development of American Agriculture: A Historical Analysis. Univ. of

1980s began to show the potential to incorporate food production and agriculture as a means of livelihood for immigrants. For example, over 1,000 Hmong refugees who came after the Vietnam War resettled in Fresno and set up small farms. After resettlement, Southeast Asian refugees took advantage of urban agriculture opportunities, as exemplified by 75 Cambodian families producing on 15 acres of land outside Providence, Rhode Island and 125 Hmong families producing crops on a dozen acres of land on a dairy farm outside of their new home in Leominster, MA during the late 1990s.

Currently, in some parts of the US, immigrants, including large refugee populations, have been able to integrate agriculture as a significant component of their way of life. In Fresno, CA, for example, over 1,000 Hmong farms have been established in the past ten to fifteen years. As a result, many of the Hmong have maintained their valued cultural traditions, dietary habits, and agrarian lifestyles. These activities have benefited their health and overall quality of life, and provided income and employment for thousands of refugees. In essence, food production not only influences diet, but overall lifestyles and economic well-being. Participation in agriculture can be as important as health care and other social services for newer refugees for whom an agrarian heritage is so fundamental to who they are and to their aspirations as they struggle to make a new life in the United States.

The Northeast now is not what it was a century or two ago when a large share of the population lived in rural areas. Today's farmers represent only about one per cent of the population; their average age is 55-60; and they are struggling to pass their family businesses on to the next generation. The result is fewer farms and less land being cultivated year after year. Still, agriculture today is still big business, sustained through innovative strategies that have allowed farmers to specialise their production, marketing, and value-added enterprises. Net income per acre in this region is the fourth highest in the country. With over 250 farmers' markets, dozens of CSAs, hundreds of farm stands and expanding wholesale customers, Massachusetts is a leading state for direct marketing; and that creates opportunities for small producers. A typical new farm start-up here is a part-time operation that relies on niche products and direct marketing – an ideal model for immigrants in urban environments that allows a scaling up approach to building sustainable farm enterprises.

New Entry Sustainable Farming Project (New Entry):

Roots of New Entry: The New Entry program focused its efforts around Lowell, MA since more than 30,000 Cambodians had settled there and Cambodia is primarily an agrarian society.

Several Massachusetts farm groups agreed to assist the project in its formation. The next step was finding some farmland, a way to plow the fields, fertilize, and gain access to irrigation water for growing. Fortunately John Ogonowski, a farmer in nearby Dracut, offered 15 acres of land on his farm and New Entry quickly recruited a dozen Lowell-based Cambodians with the help of local social service agencies. Ogonowski's ancestors emigrated to the US from Poland in the 1850s and had received help to settle the land and begin farming; John wanted to extend the same helping hand to these new refugees and became their mentor - plowing the land, incorporating compost, digging an irrigation pond, and giving advice however he could for new growers who barely understood English.

These new Cambodian refugee farmers proved to be adept growers, and soon produced beautiful Asian crops that gave them and the New Entry project confidence that this farming model could succeed. In March 2001, John help the project expand to a nearby farm site newly acquired by that Dracut Land Trust, Inc., land that he again plowed and harrowed for the farmers to use that season. A few months later, Ogonowski, also an American Airlines pilot, was the first victim of 9/11 (see http://en.wikipedia.org/wiki/Talk%3AJohn_Ogonowski). The project continued to operate on these sites, and has since expanded to two new incubator training farms, including a new one on a nearby site dedicated as a Memorial to John's legacy.

New Entry's evolution: New Entry was created to help develop the next generation of farmers and to address an aging farmer population. With John's help and the skills of talented growers, initially it was easy to overlook the complexity of such an ambitious endeavor, and the challenges quickly became apparent. The immediate issues of creating shared-use infrastructure at training farms were challenging and the project focused on sustaining basic operations on the farm sites, such as capitalizing and maintaining infrastructure, installing functional irrigation systems, having the tools and supplies farmers needed, and also realizing that refugees from the other side of the globe needed to better grasp the fundamentals of New England agriculture. Training needs on many basics of crop production in a temperate climate emerged: timing of planting and harvest dates; watering and pest management; help finding (legal) seed sources; storing harvested crops; and accessing good markets where they would receive a fair price for their bounty. With scarce English language and literacy skills, the farmers struggled to navigate their cultural communities and marketplace. Many farmers struggled to read traditional farm educational materials, and even if they could, most of the literature was inappropriate to their scale of farming or to the crops they grew. Most importantly, *growing* a bounty of ethnic crops is just **one** component of a comprehensive skill set needed to succeed in starting a small farm enterprise as an independent producer. Sustaining a successful farm business requires farmland

and equipment, good markets, and financial resources for basic operations – and while the refugee farmers could produce food, most of them struggled to address a number of other competencies needed to run a farm business successfully. For example, access to USDA Farm Service Agency credit programs required careful farm records that the refugee farmers did not keep, especially with the cash-based business approach many preferred. Thus, moving towards independent operations on a larger scale brought with it a whole new set of demands that required intensive individual technical assistance using a variety of approaches.

Thus, New Entry's agenda evolved in response to meeting these needs. With new funding, new staff with farming experience, and a new strategic plan, New Entry spent the next five years (2002-2007) developing and implementing a comprehensive new farmer training program suited to the needs of beginning producers who loved to farm but had no formal agricultural training and who had limited resources, were culturally diverse, and had limited in English language and literacy. New Entry developed the country's first farming curricula in Plain Language (low literacy) formats, complete with audiovisual content and hands-on field-based demonstrations. New farmers received year-round technical assistance, including help to order seeds, operate farm equipment safely, manage water and weeding, farm organically, develop new markets, and maintain product quality from seedling to point of sale. In essence, New Entry became both a farm training school and an Extension service for participants engaged in our program. Cultivating dozens of farm and community partners, the project received help with every aspect of operations, from farmer recruitment and outreach to training and technical assistance, accessing supplies, cultivating markets, and accessing farmland. With few existing program models to rely on, New Entry always had a rapid learning curve, and enjoyed many "lessons learned" before coming up with 'best practices'. All the work is very exciting, it is always challenging, and there are always more needs to address than resources to provide for them.

Nonetheless, New Entry continued to expand its work and developed a 'transitioning farmer' initiative in 2006 that helped incubator-based participants to find other farmland beyond its training sites and to move to independent operations on land leased independent of New Entry. In 2005, New Entry started World PEAS (People Enhancing Agricultural Sustainability), a collaborative marketing initiative to help small-scale producers aggregate their products and reach more lucrative market outlets. After seven years of development and growth, World PEAS now operates a financially self-reliant multi-producer CSA program benefitting dozens of small-scale farmers with secure market outlets that pay profitable prices. In 2008, based on interest by new farmer groups entering the program, New Entry began a livestock training program and poultry demonstration project complete with a Mobile Poultry Processing Unit (MPPU), the first

of its kind in the Commonwealth. This project involved developing both the infrastructure (the processing unit) and the regulatory framework to allow small-scale producers to direct market farm-raised and farm-processed poultry. As a result of all the farm training programs and comprehensive support services being offered, New Entry began attracting more aspiring and beginning farmers to its programs. New Entry participants now include a wider range of beginning farmers, including interns and apprentices, transitioning farmworkers and career changers, but with a continuing emphasis on socially disadvantaged populations. New Entry's work spans the Commonwealth of Massachusetts, now with its livestock training program gone statewide, and a statewide farmland matching program that are innovative models for small-scale and beginning farmers.

New Entry is co-sponsored by Tufts University and by Community Teamwork, Inc. in Lowell. Its work has been recognized through national awards (e.g.; Glynwood Harvest Award and WHY Hunger Award) and has gained a reputation as a national beginning farmer program leader. Part of that recognition is based on a willingness to partner with other organizations and to share program strategies and resources with emerging programs. New Entry has helped other incubator projects get off the ground with program resources and model sharing since its inception and in 2002, New Entry spearheaded regional and national networks for immigrant farmer programs, even providing the seed funding and technical assistance for many of the other immigrant programs that started in the region. Today, New Entry is working closely with two new refugee incubator programs in Massachusetts (LSS) and New Hampshire (IINH) and providing ad hoc consulting services to other national beginning farmer programs.

New Entry's website (www.nesfp.org) offers cost-effective dissemination strategies already developed. This unique, comprehensive library of tools and publications benefits newer farm incubators and it receives thousands of independent visits every month. While New Entry plans to continue to expand these online resources, this information alone does not begin to cover the multiple types of assistance requested by service providers and staff of emerging beginning farmer projects. Many of New Entry's program protocols and management systems (the internal "nuts and bolts" of daily operations) are not published to the website and still need to be more fully documented.

New Entry Sustainable Farming Project (New Entry):

New Entry is co-sponsored by Tufts University and by Community Teamwork, Inc. in Lowell. Tufts students are an invaluable resource in developing training materials and helping with many project activities. In addition, USDA, Extension, farm business owners, non-profit

farm organizations, and established producers provide a range of technical assistance and other essential services to our farmers. Because access to farmland is a major element of independent farming, New Entry set up an interactive farmland data base on its website where any interested producer can find available land. In tandem we sponsor a farmland matching service to help new entry producers negotiate leases with landowners. Since demand for our program now exceeds our capacity to respond, we are rapidly building up distance education resources, accessible through our website (www.nesfp.org). These include farming resources, risk management guides (in Plain Language), and online beginning farmer courses tailored to new Massachusetts-based beginning producers (in development). In addition, we have a farm employment referral guide that lists opportunities for aspiring and beginning farmers to obtain 'on the job' training at established nearby farms.

More broadly, Massachusetts has a wealth of resources and services for beginning farmers. New Entry has set up the Beginning Farmer Network as a statewide partnership model to promote more efficient access to training, technical assistance, land access, marketing, and other services among a widening base of smaller-scale farmers. This imitative has three elements:

- Set up a statewide referral network of service providers who assist beginning farmers to improve coordination in the provision of farm programs and services.
- Gather online training and education resources appropriate to beginning farmers and incubators, and make these available as a clearinghouse through our program website.
- Pilot a structured new farmer development sequence termed 'learning ladders' that combines use of these above developments to help participants engage in a more systematic learning and enterprise expansion process.

The Scope of Incubator Programs: Farm incubators play a critical role in new farmer development, a key to sustaining the growth of local and regional farming systems. The scope and diversity of assistance needed or sought by these new producers can be extensive. Incubator projects are seeking to address the multiple facets of farming: access to farming resources and farmland; production skills; marketing tools; financial management; labor management, and a host of other competencies critical to developing entrepreneurship skills and viable farm operations. Many emerging farm projects struggle to develop the comprehensive nature of programming required to address all beginning farmer needs, especially with limited funding and staff capacity. The following tables list activities that can be offered by incubators, specific training and technical assistance options to offer participants, and some of the development areas new farmers take on via incubators (or otherwise):

1. Types of Programs Offered by Incubators
New participant outreach / recruitment
Incubator land-based gardening operations
Incubator land-based farming operations
Farmer / gardener education / training activities
Farmer / gardener technical assistance (TA)
Education / training curriculum development
T&TA resources – library and/ or online
Sponsoring markets (farmer mkt., CSA, stand)
Market incentive programs (vouchers, coupons)
Address hunger, food security (donations, etc.)
Outreach and referrals for services, T&TA
Transition farmers to independence
Farmer-farmland linking / matching
Value added (e.g., packaging, food processing)
IDAs or similar client financial development
Micro-enterprise lending
Farmer-to-farmer mentoring
Employment or internship referral / matching
Gardening space / farmland – ID and matching
Food / nutrition ed. - home ec., cooking, storage
Prof'l skills – ESL, financial literacy, computers
Research project

2. Training and Technical Assistance Options
Develop your own T&TA materials
Develop videos, webinars, other AV
Access others' training resources
Workshops - single /multiple onsite
Courses – multiple sessions - onsite
Field visits (other farms, markets, etc.)
Outside workshops, conferences
Computer training – webinars, websites
One-one / group onsite technical assistance (TA)
Email and/or phone TA
Plain language / lower literacy content
TA by other service providers
Translation of materials
Interpretation services, equipment, training
Farmer-to-farmer mentoring and TA roles
T&TA resources – hard copy, online

3. What Development Farmers Can Address
Assessing farming careers, specifics, next steps
Farm enterprise planning / business planning
Access to farmland
Saving money / building resources
Access to credit, farm loans
Market planning and access
Record keeping
ESL courses, life skills courses
Computer and internet skills / access
Mentoring roles for newer farmers
Independent farm planning & development
Translation / interpretation
More active roles in project
Advanced education / training
More technical assistance
Independent farm transitioning
Stronger connections to mainstream farming
Accessing USDA (credit, insurance, EQIP)
Access to farm labor
On-farm employment, internships
Farmer leadership training

New refugee farmers and incubators – a different category: Reflecting the success of New Entry and other immigrant and refugee serving projects, the Office of Refugee Resettlement at HHS launched a grant program to establish incubators for recently arrived refugees in 2003. The program is called the **Refugee Agriculture Partnership Program** or **RAPP**. Since then, more than 20 such initiatives have gotten underway through this program and others have started up with resources from USDA and other local and state funders.

Like the older incubators, this model focuses on developing a multi-user central site where fresh produce is grown and some of it is sold as part of developing micro-farm enterprises. The Office of Refugee Resettlement (ORR) responded to this dynamic by incorporating gardening-scale programs alongside more involved agricultural enterprises in its past grants funding new incubators. The projects are moving their participants along the enterprise development continuum: *Home Gardener → Market Gardener (Incubator) → Micro-Farmer (incubator) → Independent Farmer.* This progression allows refugees of differing capacities and stages of readiness to learn gradually. Most RAPP projects are working with participants at two or more of these stages. Each has its own demands and as the level of participants scales up, the resources (T&TA, land, marketing, finances) necessary for operation increase. In addition, many

are incorporating health, nutrition, cooking, food sector employment, and other valuable components to their programs.

Following are some summary statistics concerning current RAPP projects:

- The 14 RAPP gardening and farming programs had approximately 886 families and 1,682 individual refugee participants. Across the projects, the three ethnic groups most representative were Bhutanese, Burmese, and Bantu.
- RAPP grantees sponsored 45 community gardens, nine gardens in housing complexes, 18 incubator training farms, 12 independent farm sites, and four other sites.
- RAPP projects trained 578 "gardeners," 241 "market gardeners," 79 "beginning farmers," and 17 "independent farmers" in total. Projects provided technical assistance particularly in the areas of production and marketing.

This approach also facilitates involvement that provides not only tangible food and financial benefits, but also therapeutic benefits and social connections among the refugees themselves and across the broader community. ORR's investment in immigrant farming also allows a diversity of scale of development that can be more adaptive to recently arrived urban-based refugees. It helps jump start programs where resources and access to farmland are limited, particularly in large urban areas. Furthermore, it allows a scaling up process along a continuum: participants begin with gardening, scale into urban agriculture, and build into independent farming.

Nonetheless, the immigrants and refugees participating in New Entry or other earlier incubators were settled in the U.S. for many years before beginning to farm. By contrast, recent refugees who want to produce food are in the early resettlement stages. Many are still recovering from traumatic histories and few speak much English. Most of those resettled have few assets and are still acculturating to life in this country when their interest is piqued in farming. These are impediments commercial farming ventures working with international populations must address in a practical manner. On the other hand, this widespread migrant interest in farming also brings unique opportunities. Recent refugees with agricultural backgrounds have a closer connection to that experience and are acclimated to the toil demanded from agriculture. They want to produce traditional foods not available in their local markets. Most do not yet have jobs, and can benefit right away from even a modest income from selling food.

RAPP Sponsorship: The earlier incubator models were primarily sponsored and managed by organizations with greater involvement in food and farming. By contrast, RAPP grants are sponsored by refugee-serving agencies that typically have little experience with gardening, urban

agriculture, or full-scale farming. They also have limited training and TA resources suitable to their audiences, since almost all existing farm education materials are too advanced linguistically or in content, particularly taking into consideration the scale and types of crops refugees will grow.

The strength of these agency sponsors, however, is in the depth of their experience and breadth of services for recent refugees. They have interpreters, adjunct programs like ESL, training space, and other resources at hand. They are enthusiastic about involvement in agriculture, as are their clients. Motivation is of high value in operating startups. However, the projects can only succeed with extensive partnering, particularly in the farming sector. Connecting to the agricultural community is often challenging from the outside. Nonetheless, local farms, USDA Extensionists, and others are generally enthusiastic about these projects.

While these RAPP programs vary a lot in approach and operations, they face similar challenges, such as access to land when centered in cities like Houston, Chicago, or Atlanta. Many projects start from a community garden or market gardening level, with the expectation that participant will subsequently move into commercial farming and then develop independent operations. In effect, this adds a third stage to their programs, because their emphasis is not necessarily engaging in farm-level commercial production from the outset. Helping farmers to transition from a garden plot into a much larger farm operation requires finding suitable farmland and addressing all the facets of site development, equipment and infrastructure, transportation, expanding markets, financial management, and more. During a recent visit to a project in Fort Wayne, Indiana, it was discovered this is exactly what is occurring there. While developing two large market gardens, the project was offered several acres of accessible farmland, and responded by having it lightly plowed and then offering it to refugees who felt they could handle that scale of farming. However, they had not anticipated myriad inevitable complexities would arise, including basics such as irrigation, pest control, equipment storage, and marketing. In that respect, the lack of adequate guidance meant that an opportunity that could succeed might risk at least short-term failure until these multiple components can be addressed effectively.

For refugee agencies, taking on projects with these incremental scales of production - often with multiple sites - is more ambitious than any of the original immigrant and refugee-serving projects embarked upon previously. Yet, the approach is consistent with addressing the differing capacities of recent refugees rather than of those more settled. Nonetheless, if projects are to succeed at each level and sustain themselves, they must develop coordinated strategies and rapidly move along the development curve over the three years of RAPP funding. That makes

the learning curve for sponsors and staff quite steep. By the end of the grant period, projects will need much larger budgets, mainly derived from alternative sources, in addition to an expanded capacity via their own agency and partners if they want to continue to develop. Under these challenging conditions, many priori RAPP grantees have achieved the necessary funding to operate successful projects.

Challenges and best practices to incubator training models: The original immigrant / refugee incubators came to realize that while there were important benefits to their work, there were also many challenges. Many of these same issues exist today. The first participants mostly lacked familiarity with growing in temperate climates and with navigating U.S. commercial marketing systems. For the most part, Southeast Asian refugees we served spoke little English and had limited education and literacy. Few had any resources to invest in a new farm operation. (Note: Many of the African participants did speak English, and often had more schooling. As a result, language, literacy, and education posed few barriers for them around training and technical assistance in particular.) Language and cultural factors made it difficult to learn independently, since most of the literature and guidance was and is in English and at a higher level of complexity than their education allowed them to easily comprehend. Accessing farmland and markets requires outreach, coordination, technical assistance, and financial resources to be practical for low-income refuge urban-based families.

Despite these obstacles, small-scale local farming and urban agriculture is burgeoning today providing increasing opportunities for refugees, as they have greater access to urban markets, such as farmers' markets, Community Supported Agriculture (CSA), and small restaurants. Yet overall, new small-scale urban and rural producers lack formal agricultural training and tend to navigate farming services such as access to educators and service providers like USDA, markets, and equipment businesses on their own. They learn farming by attending workshops, reading 'how to farm' guides and other materials, and going online for additional information. But this assumes a level of cultural familiarity with the farm sector, and levels of literacy, education, and language skills sufficient to understand the literature, navigate the Internet, and interact with others in the farm sector. Incubators were set up precisely because these constraints impeded refugees from farming on their own and continue to be a valuable means of helping refugees navigate the farming landscape, providing direct hands-on assistance, and scale-appropriate development models and audience-appropriate training resources. Nonetheless, a key takeaway from more experienced incubators is the complexity and scale of training and technical assistance (T&TA) options and needs. The learning landscape can cover multiple dimensions of finding farmland, crop production and distribution, finances, legal issues, recordkeeping, and

food safety, to name a few. These projects cannot operate successfully on their own; they must rely on the collaboration of many partners across sectors to provide a wide complement of resources as part of a holistic approach to farming.

We also recognised that it was counter-intuitive to encourage them to become new producers when very capable mainstream producers have been giving up farming right and left. But we were swayed by their dedication, commitment to working hard, and love of the land. Many held other jobs and farmed around busy work schedules and family commitments to sustain their production. The quality and variety of crops they grew was impressive – usually varieties native to tropical settings that could also do well in the local climate. Items such as pickling spice, water spinach, bitter melon and Asian cucumbers were popular in their communities and easy to sell to Asian restaurants and retail grocery outlets. But this was also where the romance of farming left off and the more challenging production and marketing realities set in.

Where's the farm? Once settled in urban communities, immigrants do not want to move in order to access land to begin a farming operation, nor does it make sense from a risk-reward perspective for them to do so. Fortunately, there has been unused farmland in the communities surrounding Lowell, Fitchburg, and Worcester that belongs to other farmers, land trusts and institutions. But urban farmers have to commute to these sites, which costs time and money and requires a reliable vehicle sturdy enough to transport farm supplies, equipment, and products.

Having access to land is not the same as living on one's own farm. The land in question generally does not come with a farmhouse, barn, equipment, irrigation and other facilities such as toilets and washing stations. Our project negotiated leases with the landowners and took responsibility for providing infrastructure for shared use by multiple farmers. Supported by a variety of grants, we installed irrigation and storage, purchased equipment, and arranged for ploughing and other necessary land preparation each year in return for modest rents from users. These preparations turned out to be far more expensive than initially anticipated, and would certainly have been beyond the financial reach of most of these beginning farmers. Farmland prices in Eastern Massachusetts are prohibitive, so farmers ready to farm on their own have to consider moving to another part of the state or region where land is more affordable. The alternative for those who want to stay is to rent larger acreage on their own, if they can find sufficient resources to manage a more sizable operation. An independent operation requires infrastructure investments and often more helping hands, further complicating access logistics and making it more difficult to balance farming with other work commitments.

Sustainable production practices: On an acre or two, most beginning immigrant farmers rely on small equipment and a lot of physical labour. Our tractors take care of the initial ploughing and harrowing, and sometimes the laying of raised beds, but after that, planting is done by hand, as is much of the weeding and all the harvesting. Over time, these farmers have come to appreciate the benefits of using mulch and small tillers, but often their unique inter-cropping strategies and trellising practices limit the suitability of machinery to manage many crops. In general, our Southeast Asian growers produced a wide variety of vegetables and herbs, including many items from their traditional cultural diets: white lettuce, pigweed, water spinach, cabbage, winter melon tips, pumpkin tips an flowers, bitter melon tips, taro stems and leaves, mustard greens, taro roots, pea tendril tips, lemon grass, Asian basil, holy basil, moe manh (pickle spice), mint, chives, tomato leaves, edible flowers, cucumbers, gourds, wintermelons, bitter melons, water melons, bell peppers, chili peppers, pepper leaves, long eggplants, corn, string beans, Hmong herbs, fish cheek mint, baby corn, Asian okra, squash, Asian celery.

Two of the biggest production challenges we encounter are watering and pest management. These farmers grew up in tropical countries where daily rain is common, and some crops like water spinach need moist soil. However, it is not uncommon for us to see farmers watering on a daily basis, whether it is rainy or dry outside, warm or cool. As a result, shallow root development makes the crops more susceptible to wilting during hot and dry periods, as well as more prone to diseases and certain pests.

Immigrants who gardened or farmed in the US before starting with us also got accustomed to using pesticides without any professional training. They bought insecticides at retail garden stores and applied them to inappropriate crops. Many farmers lack a basic appreciation of pesticide safety and health risks. Our staff made proper use of pesticides and the promotion of alternative pest management strategies its highest priority, but often we still saw unsafe practices being repeated year after year. When farmers cannot read labels or other instructions, and cannot communicate effectively with English-speaking technical assistance providers, these kinds of challenges can persist. We eventually converted our farm sites to organic production as this proved to be the best response to this problem and because it was a better way to exemplify our name and mission.

Earning a decent income: While there is local demand for the specialty crops favoured by immigrant and refugee farmers, the prices received in their communities are often rock-bottom. A visit to an Asian grocery store is a boon for shoppers and a bust for producers. Working-class customers cannot afford the premiums that higher-end shoppers are willing to pay. We

encouraged farmers to instead sell at higher-end farmers' markets where they got much better prices. However, many have struggled with the additional time commitment involved. Some have language problems as well. Most would rather stay on the farm and let somebody else do the selling. We organised a marketing cooperative to do just that, focusing now on a CSA and wholesale accounts – not an easy or quick solution, but necessary to optimise marketing opportunities. It is now financially self-sufficient and farmers get 80% of retail produce prices rather than a much lower wholesale price, and for about the same effort on their ends.

New incubators have been experiencing most of the same challenges and don't want to 'reinvent the wheel' as they address them. But two trends have made it increasingly difficult for New Entry to provide the types and extent of assistance that is being sought. First, the rapidly expanding locavore movement is encouraging an unprecedented increase in small-scale beginning farming, with a tremendous diversity of learners who want to start farms. Secondly, federal programs have supported a large number of new beginning farmer projects. This includes HHS Office of Refugee Resettlement (ORR) that has funded more than 20 new incubator initiatives in the past four years. USDA's Beginning Farmer and Rancher Development Program (BFRDP) and Community Food Projects (CFP) have also funded a similar number of incubators. Virtually all the aspiring and beginning farmers who join these projects lack formal agricultural training or significant farm management experience, have limited resources, struggle with access to land, and may be outside the scope of Extension assistance. Many immigrants or refugees face additional cultural, language and literacy constraints.

Is commercial farming the right strategy for urban-based immigrants? Over the years, we have come to realise that passion, commitment, hard work, and the ability to produce high-quality crops isn't enough for most immigrants to develop viable farm enterprises. Even with our considerable assistance, it is challenging for them to develop a farm operation up to the level at which it can provide the producer with a decent living or at least substantial added income. Moreover, their children do not seem to be very interested in farming, further diminishing the sustainability of these operations. It seems that farming for a living is the right choice for some immigrants, but not for most.

Yet many immigrants want to grow traditional foods, love to get out on the land, and enjoy farming as a means to maintain their overseas heritage. Perhaps a more practical approach for most of them is market gardening – something between gardening for home consumption and commercial farming. At Curran Park outside of Providence, Rhode Island, dozens of Asian

immigrants tend small plots of 1/10–1/4 acre in size. The state makes the land available to them, but otherwise they are on their own. Many have been there for years. Land like this is available within a short drive from many immigrant-rich communities. If a basic infrastructure such as access to water can be provided, the growers seem pretty much able to take care of the rest. This can be a self-supporting operation requiring modest fees to sustain it, and it is a model that more immigrant communities could benefit from. It can keep more farmland in production, yet does not require the extensive investments of resources needed to train new commercial producers over a multi-year period. And it can contribute to food security where it is often needed the most.

The biggest risk to the 50+ incubators nationwide is sustainability. Often there are funds for them to get off the ground (or in the ground), but ongoing support seems more nebulous. Most of the oldest incubators have done well with USDA grant programs, but now, in aggregate, they appear to be funding no more than about a third of these incubators any given cycle. And the more advanced projects retain a competitive edge in these competitions. So it is unclear how many of these projects will survive after, say, five years in their current or evolving forms. It is therefore most critical for newer projects to evolve independent sites where the producers can keep going without the substantive support from a sponsor incubator program.

In Fresno, 1000+ Hmong and other Southeast Asians have developed independent farms without the assistance of incubators. Their greatest challenge is markets. Not being near large urban areas where they can sell through farmers' markets, CSAs, and other direct methods, many rely on local wholesale packers and distributors that pay a fraction of the retail price and are there mostly to serve the mega-farms that can be profitable within that distribution model.

Census data indicates that the fastest growing cohort of new farmers may be Hispanic transitioning farmworkers. These growers have worked as laborers on large farms in the west, southwest, and to a lesser degree the Midwest of the country. Over time they have learned the ropes and saved enough money to go out on their own. More of them are rurally based, where farmland is cheaper and more accessible. The 2007 Census of Agriculture indicates that tens of thousands of new Hispanic-owned farms started over the prior 5 years.

In short, incubators are an effective but costly approach to training new socially disadvantaged farmers such as immigrants and refugees. They should be considered as one among several alternative strategies to help make these new residents an important part of the next generation of farmers in the United States.