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ARTICLES

Seed Libraries and Food Justice: Cultivating an Effective Legal and Policy Environment

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I. INTRODUCTION

Farmers markets and community gardens, among other urban agriculture initiatives, are accepted and successful components of local healthy food access policies.[1] There is, however, no farmers market without a garden and no garden without a seed. It is that first piece—the seed—which has recently gained the attention of state legislatures in the context of legalizing seed libraries.[2] A seed library functions similarly to a traditional lending library in that it distributes seeds to patrons who, at harvest time, allow some of the plants to go to seed.[3] Then, the patrons return those seeds to the library's collection for use by the next patron.[4]

Although seed libraries fit nicely with these other healthy food access initiatives, the uncertain legal environment within which they operate render seed libraries an underused component of an overall policy solution. Furthermore, seed libraries, like farmers markets and community gardens, hold the promise of providing healthy food to low-income community members.[5] Thus, this Article argues that after legislatures amend state seed laws to allow seed libraries to operate legally in those states in which they cannot already, then seed libraries should be incorporated as a component of local healthy food access policies.

Part II of this Article explains the basic concept of a seed library, including the functions that seed libraries perform. Part III sets forth the federal and state laws that impact seed libraries. Part IV provides an overview of the current policy environment surrounding local healthy food access initiatives. Part V sets out three case studies of communities in which seed libraries complement their healthy food access policies. Finally, Part VI offers policy recommendations regarding the incorporation of seed libraries into local healthy food access initiatives.

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1. *See* POLICYLINK, ACCESS TO HEALTHY FOOD AND WHY IT MATTERS: A REVIEW OF THE RESEARCH 7 (Judith Bell et al. eds., 2013), http://thefoodtrust.org/uploads/media_items/access-to-healthy-food.original.pdf; Carrie Draper & Darcy Freedman, *Review and Analysis of the Benefits, Purposes, and Motivations Associated with Community Gardening in the United States*, 18 J. COMMUNITY PRAC. 458, 480–81 (2010).

2. *See, e.g.,* CAL. AGRIC. CODE § 52451(f) (Deering 2017); 505 ILL. COMP. STAT. 110 / 2.121-5 (2017); 505 ILL. COMP. STAT. 110 / 7(b) (2017); MINN. STAT. § 21.87(a)(4) (2017); NEB. REV. STAT. § 81-2, 147.05(1)(d) (2017); Dan Kraker, *Duluth Library's Seed-Sharing Program Restocked*, MPR NEWS (May 22, 2015), https://www.mprnews.org/story/2015/05/22/seed-library; Chris Peters, *Omaha Lawmaker Wants to Rid Seed Libraries of Outlaw Status*, OMAHA WORLD-HERALD (Feb. 24, 2015), http://www.omaha.com/news/legislature/omaha-lawmaker-wants-to-rid-seed-libraries-of-outlaw-status/article_d3f5f42b-c1ea-5fe6-909d-8c5cbdfeab82.html.

3 .*Why Seed Libraries?*, SEED LIBR. SOC. NETWORK, http://seedlibraries.org/page/why-seed-libraries-1 (last visited June 20, 2017).

4. *Id.*

5. *See, e.g.*, Travis Grimler, *Pine River to Have Seed Library with Goal of Cutting Food Poverty*, PRAIRIE BUS. MAG. (Mar. 10, 2017), http://www.prairiebusinessmagazine.com/business/agriculture/4232333-pine-river-have-seed-library-goal-cutting-food-poverty (discussing the creation of a seed library "to combat food poverty").

II. SEED LIBRARIES

A. The Basic Concept

Although humans have saved and exchanged seed for millennia, the most recent iteration of that ancient practice began in the 1980s: The seed bank movement.[6] There are currently more than 1,400 seeds banks around the world, all with the goal of collecting seed reserves and holding them as a backup system.[7] In fact, it is said that "[s]eed banks constitute humanity's agricultural memory."[8] The most famous and most comprehensive seed bank is the Svalbard Global Seed Vault, located deep in the Norwegian permafrost and home to more than 880,000 samples of seed from nearly every country in the world.[9]

One variation of a seed bank that has gained considerable traction recently is a seed library. There are over 600 seed libraries in North America, and many in other parts of the globe.[10] While seed libraries and seed banks essentially share the same goals, seeds in a seed bank are "locked away, not reproducing, waiting for plant scientists or a planetary food emergency to call them into action."[11] On the other hand, seed libraries "bring plants into circulation, town by town, encouraging local variety and even potentially developing new strains."[12] The basic concept of a seed library mirrors that of a traditional lending library: Donors give seeds to the library and patrons check-out those seeds to plant themselves.[13] At harvest time, the patron allows some of the plants to go to seed, and, depending on the laws of the state, the patron may give those new seeds to the library for the next patron to use.[14]

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6. *Community Seed Banks*, DIVERSIFOOD, http://www.diversifood.eu/wp-content/uploads/2016/04/Diversifood_innovation_factsheet1_CSB.pdf (last visited Sept. 4, 2017).

7. *The Importance of Seed Banking*, AG SCI. MAG. (Summer/Fall 2010), http://agsci.psu.edu/magazine/articles/2010/summer-fall/the-importance-of-seed-banking.

8. Ross Andersen, *Rescuing Ancient Seeds from a War-Torn City*, ATLANTIC (Sept. 23, 2015), https://www.theatlantic.com/science/archive/2015/09/rescuing-ancient-seeds-from-a-war-torn-city/406978/.

9. *See Svalbard Global Seed Vault*, CROP TRUST, https://www.croptrust.org/our-work/svalbard-global-seed-vault/ (last visited July 1, 2017).

10. Shannon Eblen, *Is the Time for Seed Libraries Long Overdue?*, COURIER-POST (Mar. 8, 2017) http://www.courierpostonline.com/story/life/2017/03/08/time-seed-libraries-long-overdue/98059502/.

11. Kevin Hartnett, *'Seed Libraries' Try to Save the World's Plants*, BOS. GLOBE (Mar. 9, 2014) https://www.bostonglobe.com/ideas/2014/03/09/seed-libraries-try-save-world-plants/XnM6HJ8GCfPoo6JWtU6DQL/story.html; *see also* UTVIKLINGSFONDET, BANKING FOR THE FUTURE: SAVINGS, SECURITY AND SEEDS. A SHORT STUDY OF COMMUNITY SEED BANKS IN BANGLADESH, COSTA RICA, ETHIOPIA, HONDURAS, INDIA, NEPAL, THAILAND, ZAMBIA AND ZIMBABWE 4 (2011), http://www.utviklingsfondet.no/files/uf/documents/Rapporter/Banking_for_the_future.pdf (hereinafter "BANKING FOR THE FUTURE") (explaining that the seed library model allows seeds to evolve and encourages the maintenance of knowledge and culture surrounding caring for the seeds).

12. Hartnett, *supra* note 11; *see also* BANKING FOR THE FUTURE, *supra* note 11, at 4 (explaining that the seed library model allows seeds to evolve and encourages the maintenance of knowledge and culture surrounding caring for the seeds).

13. *Why Seed Libraries?*, *supra* note 3.

14. *See id*. Note, however, that in some states, there are restrictions on a patron's ability to return seeds to the seed library. *See* 505 ILL. COMP. STAT. 110 / 2.121-5 (2017).

B. Functions

In the most comprehensive global scientific study of seed libraries and banks, researchers identified three key functions of seed libraries: "(i) [C]onservation of plant genetic resources; (ii) access and availability of diverse seeds and planting materials according to farmers' needs and interests; and (iii) seed and food sovereignty."[15] The purposes of seed libraries differ, however, depending on whether they are located in a developed versus a developing country.[16] Accordingly, these three key functions of seed libraries globally must be adapted to describe the three key roles of seed libraries in the United States: (1) Preservation, both of genetic resources and of local history; (2) advancement of seed and food sovereignty; and (3) promotion of gardening and access to healthy foods.[17]

1. Preservation

A key purpose of seed libraries is preservation, both of plant genetic resources and of local history.[18] Historically, farmers managed biodiversity through planting, harvesting, and storing seeds; however, modern developments such as the commercialization of agriculture have disincentivized this practice.[19] Accompanying the loss of these seed-saving practices is the loss of genetic variability. With the loss of genetic variability at the local level comes the loss of the local history and traditional knowledge associated with this genetic diversity: Gone are certain plants, as well as the stories of the plants' origins and how to care for them.[20] Seed libraries can fill this gap.

a. Conserving Plant Genetic Resources

Before addressing the specific way in which seed libraries can contribute to increased genetic diversity in plants, it is important to understand the current backdrop regarding plant genetic resources. The United Nations Food and

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15. Ronnie Vernooy et al., *The Roles of Community Seed Banks in Climate Change Adaptation*, 27 DEV. IN PRAC. 316, 318 (2017).

16. BHUWON STHAPIT ET AL., COMMUNITY SEED BANKS: ORIGINS, EVOLUTION AND PROSPECTS 20 (Ronnie Vernooy et al. eds., first ed. 2015); *Community Seed Banks*, *supra* note 6.

17. *See* STHAPIT ET AL., *supra* note 16, at 1–2; Ronnie Vernooy et al., *The Multiple Functions and Services of Community Seedbanks*, 3 RESOURCES 636, 639 (2014); Vernooy et al., *Roles of Community Seed Banks*, *supra* note 15, at 318; Hartnett, *supra* note 11; *Watauga County Public Library Launching 'Seed Library'*, MOUNTAINTIMES.COM (Feb. 16, 2017), http://www.wataugademocrat.com/mountaintimes/watauga-county-public-library-launching-seed-library/article_f01dd619-62ed-5a37-9615-57b24cd1bd74.html; *Community Seed Banks*, *supra* note 6; *Seed Saving*, *Agricultural Biodiversity Conservation Project,* BERRY U., https://sites.berry.edu/abc/seed-saving/ (last visited August 30, 2017).

18. *See* STHAPIT ET AL., *supra* note 16, at 20.

19. *See* CGIAR, SOUTH AFRICA IMPLEMENTS A NATIONAL STRATEGY TO SUPPORT COMMUNITY SEED BANKS (Sept. 2016), http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/130727/filename/130938.pdf; *Seed Saving*, BERRY U., *supra* note 17.

20. *See* BANKING FOR THE FUTURE, *supra* note 11, at 6; CGIAR, SOUTH AFRICA IMPLEMENTS, *supra* note 19; Jeanette L. Yasol-Naval, *Environmental Stewardship and Community Seed Banking: An Analysis of Stewardship in Theory and on the Ground*, 13 SOC. SCI. DILIMAN 1, 10 (2017).

Agriculture Organization reported that the world lost seventy-five percent of its crop diversity between 1900 and 2000.[21] A subsequent study predicted that climate change will lead to an additional twenty-two percent loss of the wild relatives of food crops such as peanuts, potatoes, and beans by 2055.[22] If "genetic variation holds the key to the ability of populations and species to persist," then this news is sobering.[23]

A benefit of seed libraries, as opposed to formal-sector conservation or plant-breeding efforts, is that they work to preserve underused species that may be left out by other efforts.[24] In fact, in developed countries, this is one of the most important contributions of seed libraries.[25] The impact of this can be felt strongly at the local level, where in addition to being better adapted to the location's overall climate, local crop varieties tend to be more drought-resistant and have better nutritional value.[26] Given the uncertainties of climate change, seeds that are amenable to harsher climates, such as drought-resistant seeds, may become even more valuable in the future.[27]

b. Preserving Local History

In her article *Kentucky Garden Stories: Planting Resistance*, Professor Kate Black wrote of interviewing gardeners who, in an effort to keep traditions alive, expressed "a deep responsibility to grow as much food as they can."[28] Creighton Lee Calhoun picked up on this theme of agriculture as a vehicle for tradition in the preface to the book *Old Southern Apples*, where he explains his purpose for driving from old farm to old farm in search of forgotten and near-extinct varieties of apples: "[O]ur unique southern heritage is . . . also Bloody Butcher corn, Red Ripper peas, Ledmon watermelons, Greensboro peaches, upland cotton, Gold Dollar tobacco, and James grapes. These are living threads that lead directly back to three hundred years of the southern agrarian past."[29]

For instance, Calhoun tells about an elderly gentleman from the North Carolina mountains whose family stored apples in his childhood bedroom.[30]

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21. *Crop Biodiversity: Use It or Lose It*, FOOD AND AGRIC. ORG. UNITED NATIONS (Oct. 26, 2010), http://www.fao.org/news/story/en/item/46803/icode/.

22. *Id.*

23. M. Govindaraj et al., *Importance of Genetic Diversity Assessment in Crop Plants and Its Recent Advances: An Overview of Its Analytical Perspectives*, GENETICS RES. INT'L (2015), https://www.hindawi.com/journals/gri/2015/431487/. One example of the benefits of genetic variation is that it can render crops less vulnerable to disease. *See* Hartnett, *supra* note 11. As an example from history, the potato blight was felt much differently in Ireland, which grew one variety of potato, than in Peru, which grew many varieties. *Id.*

24. Vernooy et al., *Multiple Functions*, *supra* note 17, at 649; *Community Seed Banks*, *supra* note 6.

25. *Community Seed Banks*, *supra* note 6.

26. Zofeen Ebrahim, *Seed Banks Help Communities Adapt to Climate Change*, THETHIRDPOLE.NET (May 14, 2014) https://www.thethirdpole.net/2014/05/14/seed-banks-help-communities-adapt-to-climate-change/.

27. *Id.*

28. Kate Black, *Kentucky Garden Stories: Planting Resistance*, 16 J. APPALACHIAN STUDIES 122, 123 (2012).

29. CREIGHTON LEE CALHOUN, OLD SOUTHERN APPLES xiii (2d ed. 2010).

30. *Id.* at 20

Apples, of course, could only be stored through the winter if kept in a cool place.[31] When Calhoun questioned the man about how the apples could have been stored properly under his bed, the gentleman replied that "his room was so cold he had an inch of snow many mornings on his bed, the snow having sifted through cracks in the walls."[32] In addition to chronicling techniques for preserving apples, Calhoun recorded the history of the apples themselves, such as the Summer Banana apple, a variety prized by workers in the Marion County, South Carolina tobacco fields.[33] In chasing apple varieties, he also chased stories, stories about how people ate, and how they lived.[34]

This link between the soil and history is not unique to the American South. Recently, across the globe, the Palestinian Heirloom Seed Library opened in a West Bank village.[35] While the library's central purpose is to preserve heirloom seeds and biodiversity, the librarian partners this mission with an oral history project, recognizing, like Calhoun, the link between agriculture and stories.[36] Out of that oral history project came, for instance, a story of a Palestinian woman who was exiled to Kuwait.[37] Out of all of the possessions that she could have taken with her, she took orange seeds, which she then planted when she arrived in Kuwait.[38]

2. Seed and Food Sovereignty

In addition to their preservation function, seed libraries also function as vehicles for seed and food sovereignty.[39] Seed sovereignty is "the right of farmers to save, use, exchange, and sell their own seeds," as opposed to corporations controlling the distribution of seeds.[40] Seed sovereignty is premised on the idea that open-source seeds and biodiversity are a public good and should not be patented or owned.[41] Beyond the idea of seeds and biodiversity as part of the commons, seed sovereignty is also premised on a concern with genetic modification of seed.[42] Genetically modified crops faced criticism after they were

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31. *Id.*

32. *Id.*

33. *Id*. at xvi, 147, 199 (noting, to be clear, that apples can only be duplicated by grafting or planting sprouts).

34. *See also* James R. Veteto, *Deep Down in the Holler: Chasing Seeds and Stories in Southern Appalachia*, J. ETHNOBIOLOGY & ETHNOMEDICINE 69, 70 (Sept. 2013) (describing a similar chase to Calhoun's in his search for heirloom gardeners).

35. Dalia Hatuqa, *First Seed Library Sprouts in Palestine*, AL JAZEERA (June 2, 2016) http://www.aljazeera.com/news/2016/05/seed-library-sprouts-palestine-160524074731273.html.

36. *Id.*

37. *Id.*

38. *Id.*

39. Vernooy et al., *Roles of Community Seed Banks*, *supra* note 15, at 318 (noting, however, that few seed banks "explicitly present their efforts as promoting seed and food sovereignty").

40. Elizabeth Louis, *Seed Sovereignty is a Just Fight But What Else Should We Consider?*, U. OF HAW. CTR. FOR S. ASIAN STUD. (Jan. 14, 2013) http://www.hawaii.edu/csas/seed-sovereignty-is-a-just-fight-but-what-else-should-we-consider/.

41. Vandana Shiva, *Definition of Seed Sovereignty*, LEXICON OF FOOD, https://www.lexiconoffood.com/definition/definition-seed-sovereignty (last visited Aug. 31, 2017).

42. *Id.*

first commercialized in the United States in the mid-1990s, due to potential environmental impacts, such as the possibility of biological pollution or herbicide-resistant weeds.[43] Biological pollution concerns the "genes of GM crops [finding] their way into the genomes of wild species, conventional crops, and organic crops."[44]

Within that movement, seed libraries can serve the administrative purpose of middleman. For instance, a seed library in the Ivory Coast stocks seeds, including mucuna and neem seeds.[45] The neem seeds serve as a fertilizer for gardens, while mucuna is a natural herbicide.[46] Therefore, the seed library provides not only the seeds from which to grow the plants (thereby disconnecting seeds from corporate control) but also environmentally and culturally conscious methods of caring for the plants.

Like seed sovereignty, food sovereignty encourages self-sufficiency and alternatives to a corporate-controlled food system.[47] The food sovereignty movement promotes "the right of each person, community, and nation to define its own agriculture and food policies and practices that will enable each entity to not just have food security, but also ensure that the food produced is environmentally sustainable, and socially just."[48]

The Navajo Nation has stated that political sovereignty cannot exist without food sovereignty.[49] To that end, the Navajo Nation has developed the Diné Food Sovereignty plan, which makes the Diné people's culture and values central to the development of its food policy.[50] Instead of replicating U.S. food policies within the Navajo Nation, the Diné people will consider their own traditions and philosophies for ranching, farming, hunting, and gathering and will develop those standards into policies to govern the Navajo Nation.[51]

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43. Allison H. Scott, *Genetically Modified Crop Regulation: The Fraying of America's Patchwork Farm Lands*, 26 VILL. ENVTL. L.J. 145, 146, 149, 151 (2015) (explaining, on the other hand, that supporters of genetically-modified crops argue that they could help the environment and alleviate world hunger, and that no evidence supports the theory that they are harmful).

44. *Id*. at 151.

45. Daniel Oulaï, *How a "Seed Library" is Helping Ivorian Farmers Diversity their Crops*, FRANCE24 (Oct. 6, 2016) http://observers.france24.com/en/20161006-seed-library-ivory-coast-farmers.

46. *Id.*

47. Lauren E. Barker, *Tending Cultural Landscapes and Food Citizenship in Toronto's Community Gardens*, 94 GEOGRAPHICAL REV. 305, 308 (2005); Maggie Ellinger-Locke, *Food Sovereignty is a Gendered Issue*, 18 BUFF. ENVT'L. L.J. 157, 181 (2010) (describing food sovereignty as "self-government of the food system"); DINÉ POL'Y INST., DINÉ FOOD SOVEREIGNTY: A REPORT ON THE NAVAJO NATION FOOD SYSTEM AND THE CASE TO REBUILD A SELF-SUFFICIENT FOOD SYSTEM FOR THE DINÉ PEOPLE 63 (2014), http://www.dinecollege.edu/institutes/DPI/Docs/dpi-food-sovereignty-report.pdf.

48. Louis, *supra* note 40.

49. DINÉ POL'Y INST., *supra* note 47, at 63.

50. *Id.* at 64.

51. *Id.* at 64, 71; *see also Navajo People – The Diné*, NAVAJO PEOPLE, http://navajopeople.org/ (last visited Dec. 11, 2017) (explaining that the Navajo prefer to be called the "Diné").

3. Promote Gardening and Access to Healthy Foods

The third function of seed libraries is to promote gardening and access to healthy foods.[52] Researchers who study community gardens in North America have identified four key reasons people garden: (1) To grow culturally appropriate food; (2) to save money on food expenses; (3) to build community; and (4) to exercise.[53] A seed library, by sparking an interest in gardening and by providing locally (and, depending on the seed library, culturally) appropriate seeds for a garden, can tap into those motivators. Furthermore, seed libraries are often linked with community gardening initiatives.[54]

One benefit of gardens is that they provide gardeners with access to crops reflective of their cultural backgrounds.[55] For instance, a community garden in Toronto features crops that are culturally in tune: Entsai, bitter melon, Vietnamese celery, and sweet potato spinach.[56] At its inception, however, that garden grew seedlings from the local garden center.[57] Over time, community members, many of whom had agricultural experience from their home countries, decided to plant culturally apt crops instead.[58] Another community garden in Toronto grows everything from hairy gourds to edible chrysanthemums, crops reflective of the diet of the community's large Chinese population.[59] For the gardeners in that community garden, a major motivator was to grow vegetables that are difficult to locate in nearby groceries.[60] Thus, an advantage of seed libraries is that at least some are able to stock heirloom or hard-to-find seeds.[61]

Another motivator for gardening is that it builds community and can eliminate barriers between people.[62] A community garden can remove "such bars to participation as high cost, language barriers, or educational achievement, which may otherwise divide residents."[63] Thus, by partnering with a community garden, a seed library contributes to community-building by providing a space for residents to collaborate and build relationships.[64] Furthermore, this com-

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52. *See* Hartnett, *supra* note 11; MOUNTAINTIMES.COM, *supra* note 17; *Seed Saving*, BERRY U., *supra* note 17; *What's a Seed Library?*, SEED LIBRARIES, http://seedlibraries.net (last visited Jan. 20, 2018).

53. Barker, *supra* note 47, at 306–07.

54. *See e.g.*, Ted Slowik, *Seed Libraries Pass Legal Muster, Give Communities Chance to Grow*, CHI. TRIB. (Jan. 24, 2017), http://www.chicagotribune.com/suburbs/daily-southtown/opinion/ct-sta-slowik-seed-library-st-0125-20170124-story.html.

55. *See* Barker, *supra* note 47, at 307, 319–20 (describing certain garden plots in Toronto as "reflect[ing] the landscape memories of their gardeners").

56. *Id.* at 320.

57. *Id.* at 319.

58. *Id.* at 320.

59. *Id.* at 313.

60. *Id.* at 313.

61. *See* DINÉ POL'Y INST., *supra* note 47, at 78; *Watauga County Public Library Launching 'Seed Library'*, *supra* note 17.

62. Jane E. Schukoske, *Community Development Through Gardening: State and Local Policies Transforming Urban Open Space*, 3 N.Y.U. J. LEGIS. & PUB. POL'Y 351, 357 (2000).

63. *Id.*

64. *See, e.g.*, *id.*; *Food Bank Plots*, CITY OF BLUE ISLAND, http://www.blueisland.org/residents/community-gardens/food-bank-plots (last visited Sept. 4, 2017); Slowik, *supra* note 54.

munity-building function of gardening can be leveraged to provide nutrition education.[65] For instance, in a related setting, research shows that interactions in a farmers market created opportunities to share farming suggestions and cooking tips.[66]

III. LEGAL LANDSCAPE

Seed libraries in the United States operate in a "legal grey are[a]."[67] But this "grey area" is not unique to the United States.[68] Globally, "[t]he development of an enabling policy and legal environment is most likely the greatest challenge that most community seed banks face."[69] Part of the reason for this legal uncertainty in the United States is that there are slight variations in the wording of different states' seed laws.[70] For instance, some states specifically exempt non-commercial seed sharing.[71] Consequently, the legality of seed libraries must be explored first at the federal level and then on a state-by-state basis.

A. Federal Laws Related to Seed

1. Plant Variety Protection Act

The Plant Variety Protection Act became effective in 1970 and was amended in 1994.[72] Its purpose is "to encourage the development of new non-hybrid varieties"[73] and offers protection to plant varieties that are new, distinct, uniform, and stable.[74] During the term of plant variety protection, the breeder has the right to prevent others from selling, reproducing, importing, exporting, or using the variety.[75] The Act includes exemptions for research and for farmers' right to save seeds, under certain conditions.[76]

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65. *See, e.g.*, Kassandra A. Alia et al., *Identifying Emergent Social Networks at a Federally Qualified Health Center-Based Farmers' Market*, 53 AM. J. COMMUNITY PSYCHOL. 335, 340–41 (2014).

66. *Id.*

67. *Setting the Record Straight on the Legality of Seed Libraries*, SUSTAINABLE ECON. LAW CTR., (Aug. 11, 2014), http://www.theselc.org/setting_the_record_straight_on_the_seed_libraries.

68. *Id.*; Vernooy et al., *Multiple Functions*, *supra* note 17, at 650.

69. BANKING FOR THE FUTURE, *supra* note 11, at 16; s*ee also* Vernooy et al., *Multiple Functions*, *supra* note 17, at 650.

70. *See* CAL. AGRIC. CODE § 52451(f) (Deering 2017); 505 ILL. COMP. STAT. 110 / 2.121-5 (2017); 505 ILL. COMP. STAT. 110 / 7(b) (2017); MINN. STAT. § 21.87(a)(4) (2017); NEB. REV. STAT. § 81-2, 147.05(1)(d) (2017).

71. *See, e.g.*, 505 ILL. COMP. STAT. 110 / 7(b) (exempting non-commercial seed sharing).

72. 7 U.S.C. § 2321 (2012).

73. B. ERKER ET AL., COLO. STATE UNIV. EXTENSION, FACT SHEET NO. 0.301, THE PLANT VARIETY PROTECTION ACT 1 (rev. 2014), http://extension.colostate.edu/docs/pubs/crops/00301.pdf.

74. 7 U.S.C. § 2402(a) (2012).

75. 7 U.S.C. § 2483(a)(1) (2012).

76. 7 U.S.C. §§ 2543, 2544 (2012).

2. Federal Seed Act

In 1939, Congress passed the Federal Seed Act.[77] The Federal Seed Act regulates interstate and foreign commerce in seeds by establishing labeling requirements for seeds with the goal of preventing the misrepresentation of seeds in interstate commerce.[78] Representations, including labels and advertisements, that a seed is a certified seed will be deemed false unless a seed certifying agency verified that the seed complied with its rules, regulations, and standards and the seed has an official label issued by that agency that states that the seed is a specific kind or variety or member of a certain class.[79]

The Act also carries a record-keeping requirement for anyone transporting or delivering for transportation in interstate commerce vegetable or agricultural seeds.[80] The Act requires those persons to maintain and make available for inspection records regarding the origin, treatment, and germination of both types of seeds, as well as records of the purity of agricultural seeds and records regarding the variety of vegetable seeds.[81] The Act is designed to protect farmers, in that

> [I]f the farmer receives the wrong seed, or defective seed, the farmer may not discover the error until it is too late to replant. If this occurs, the loss to the farmer includes, in addition to the cost of the seed, the value of the lost crop. Similarly, if the farmer plants seed that is contaminated with undesirable weed seeds, it may take years and countless dollars to eventually rid the farm of the infestation.[82]

3. U.S. Patent Law

Patent law also bears on seeds and seed sharing. Specifically, a utility patent may be granted to anyone who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."[83] Due to the Plant Variety Protection Act's exemptions, utility patents became more attractive to plant breeders.[84] In the 1980 case *Diamond v. Chakrabarty*, the Supreme Court held that "a live, human-made micro-organism is patentable subject matter" under 35 U.S.C. § 101.[85] In 2001,

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77. *Federal Seed Act Origin*, ASS'N OF AM. SEED CONTROL OFFICIALS, http://www.seedcontrol.org/pdf/federal_seed_act_history.pdf (last visited Jan. 20, 2018) (citing ASS'N OF AM. SEED CONTROL OFFICIALS, THE PROPOSED SEED INSPECTOR'S MANUAL 2–3 (1958)).

78. Federal Seed Act, 7 U.S.C. §§ 1551–1611 (2012).

79. 7 U.S.C. § 1562 (2012).

80. 7 U.S.C. § 1572 (2012).

81. *Id.*

82. James B. Wadley, *The Federal Seed Act: Regulation of Seed Sales and Remedies Available to the Seed Purchaser*, 27 S.D. L. REV. 453, 453–54 (1982).

83. 35 U.S.C. § 101 (2012).

84. Benjamin Ikuta, *Genetically Modified Plants, Patents, and Terminator Technology: The Destruction of the Tradition of Seed Saving*, 35 OHIO N.U. L. REV. 731, 737 (2009).

85. Diamond v. Chakrabarty, 447 U.S. 303, 305, 309, 318 (1980).

the Supreme Court made clear in *J.E.M. AG Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, that utility patents could be issued for plants.[86]

B. State Seed Laws and the Recommended Uniform State Seed Law

In 1897, the State of Maine passed the first comprehensive state seed law.[87] Previously, states had passed laws related to seeds, such as prohibiting the sale of weed-containing grass seed or prohibiting the sale of milkweed.[88] By 1941, all forty-eight states had passed seed laws.[89] Because each state's seed law can vary in its wording and coverage, an additional goal of the Federal Seed Act was to promote uniform state seed laws.[90]

One group working to ensure uniformity in state seed laws is the Association of American Seed Control Officials ("AASCO"), an organization made up of seed regulatory officials from the United States and Canada.[91] The AASCO meets each year to discuss seed law enforcement, learn of new seed industry developments, and update the Recommended Uniform State Seed Law.[92]

The Recommended Uniform State Seed Law is a model state seed law.[93] Its roots go back to 1915, when the Association of Official Seed Analysts developed a set of principles to guide state seed law development.[94] Two years later, those principles were turned into a uniform law, as the American Seed Trade Association felt that a model of proposed legislation would be more helpful to state legislatures.[95] In 1940, the year after the Federal Seed Act's passage, the USDA issued a Suggested Uniform State Seed Law based on the one developed by the American Seed Trade Association and the Association of Official Seed Analysts.[96]

After lobbying from seed-sharing advocates, the uniform law was amended recently to include an exemption, with certain restrictions and requirements, for non-commercial seed sharing.[97]

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86. J.E.M. AG Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc., 534 U.S. 124, 129-30, 145 (2001).

87. *History of Seed Legislation*, ASS'N OF AM. SEED CONTROL OFFICIALS, http://www.seedcontrol.org/pdf/state_seed_legis_history.pdf (last visited Jan. 20, 2018).

88. *Id.* (noting that although Maine's was the first state seed law, Connecticut passed a law prohibiting the sale of certain weed-containing grass seed in 1821).

89. *Id.*

90. *Federal Seed Act*, U.S. DEP'T OF AGRIC., https://www.ams.usda.gov/rules-regulations/fsa (last visited Sept. 4, 2017).

91. *What is AASCO?*, ASS'N OF AM. SEED CONTROL OFFICIALS, http://www.seedcontrol.org/index.html (last visited Oct. 30, 2017).

92. *Purpose Statement*, ASS'N OF AM. SEED CONTROL OFFICIALS, http://www.seedcontrol.org/purpose_statement.html (last visited Oct. 30, 2017).

93. ASS'N OF AM. SEED CONTROL OFFICIALS, RECOMMENDED UNIFORM STATE SEED LAW 3 (2016), http://www.seedcontrol.org/pdf/russl_2016.pdf.

94. *History of the Uniform State Seed Law*, ASS'N OF AM. SEED CONTROL OFFICIALS, http://www.seedcontrol.org/pdf/RUSSL_history.pdf (last visited Jan. 20, 2018) (citing ASS'N OF AM. SEED CONTROL OFFICIALS, THE PROPOSED SEED INSPECTOR'S MANUAL 2–3 (1958)).

95. *Id.*

96. *Id.*

97. ASS'N OF AM. SEED CONTROL OFFICIALS, *supra* note 93 at 10. The model law defines non-commercial seed sharing as meaning "that no monetary consideration or compensation may be transferred in return for receiving seeds. Additionally, anyone distributing seeds under the rules of this

The wording of a state seed law can dictate whether a seed library can operate legally in that state. If the seed law does not distinguish between commercial and non-commercial seed distribution, then the seed library would have the same labeling and testing requirements of a commercial seed company.[98] Even in states where a seed library's operations *may* be permissible under the state's seed law, adoption of the model law makes it clear.[99] So far, five states have passed legislation allowing the operation of seed libraries.[100]

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definition may not expect, or create the expectation, that seeds must be returned in exchange for receiving seeds. If distribution of seeds is found to be in anticipation or connected to money paid for work or services rendered by the same person distributing seeds, such distribution shall not be considered non-commercial within these rules." *Id.* at 4. The text of the model statute is listed below:

> SECTION 2B. Label and educational requirements for Non-Commercial Seed Sharing. (A) Each container of agricultural, vegetable, and flower seeds distributed for sowing purposes in a noncommercial setting shall bear thereon or have attached thereto in a conspicuous place a plainly written or printed label or tag in the English language, conveying the following information: (a) The name of the species or commonly accepted name of kind or kind and variety of each agricultural seed component present. Hybrids shall be labeled as hybrids. (b) A word or statement indicating if the seed has been treated. And, if treated, must be labeled in accordance with applicable state and federal laws. (c) Some form of reference identification that provides traceability. Retention of posterity file samples are not required. (d) Name and city or address of the non-commercial seed sharing entity. (e) The calendar month and year the seed was donated. (f) The seed shall be free of foreign material, other than coatings or treatments, including germination medium, mulch, fertilizer, pre-planted containers, mats, tapes, or other planting devices. (g) No distributed container shall hold more than eight (8) ounces of agricultural seed or four (4) ounces of vegetable or flower seed. (h) Germination and purity analysis is not required, however if a germination or purity percentage is noted on the label, it must be noted whether or not the analysis was performed according to the AOSA rules for testing seed. (B) At each location involved with non-commercial seed sharing a legible and visible sign shall state that the seeds being distributed may not meet germination or varietal purity standards prescribed by the state seed law. The sign must also state that patented seed or varieties protected by the Plant Variety Protection Act will not be accepted or distributed without permission of the certificate holder. *Id.* at 10.

See also Jordyn Ashley Bishop, *Help Save the Seeds: A Call to Action for Local Governments to Introduce Legislation to Protect Community Seed Sharing, Libraries, and Exchanges*, 9 HASTINGS SCI. & TECH. L.J. 113, 133 (2017); Cat Johnson, *SELC and Shareable Kickoff Campaign to Save Seed Sharing in the U.S.*, SHAREABLE (Jan. 12, 2015), https://www.shareable.net/blog/selc-and-shareable-kickoff-campaign-to-save-seed-sharing-in-the-us. The Save Seed Sharing campaign "is designed to educate people about seed sharing issues, support seed sharing communities, and reform overzealous seed laws." To accomplish those goals, the organization makes policy recommendations, has an online petition campaign, and makes state seed law details publicly-available on its website. *Id.* It is a partnership between the Sustainable Economies Law Center, Shareable, Richmond Grows, Seed Matters, and the Seed Savers Exchange, among others. *Id.*

98. *See* Kraker, *supra* note 2.

99. *See generally* ASS'N OF AM. SEED CONTROL OFFICIALS, *supra* note 93.

100. *See* CAL. AGRIC. CODE § 52451(f) (Deering 2017); 505 ILL. COMP. STAT. 110 / 2.121-5 (2017); 505 ILL. COMP. STAT. 110 / 7(b) (2017); IOWA ADMIN. CODE r. 21-40.16(199) (2017); MINN. STAT. § 21.87(a)(4) (2017); NEB. REV. STAT. § 81-2, 147.05(1)(d) (2017); H.B. 197B, 30th Leg., 1st Sess. (Alaska 2017) (bill supporting community seed libraries is now in committee).

1. Minnesota

In 2015, Minnesota became the first state to pass legislation to exempt seed libraries and other non-commercial uses from its formal seed testing and labeling requirements.[101] Specifically, the Minnesota Seed Law exempts the "inter-personal sharing of seed for home, educational, charitable, or personal noncommercial use" from its seed labeling requirements.[102] Since then, new seed libraries have opened throughout the state.[103]

The amendment to the Minnesota Seed Law came after a seed inspector from the Minnesota Department of Agriculture informed the Duluth (Minnesota) Public Library in 2014 that its seed-sharing program likely violated the Minnesota Seed Law.[104] Language in the then-existing statute treated freely distributing or exchanging seeds the same way as selling seeds.[105] Selling seeds triggered a labeling and testing requirement that would be difficult to implement in the small-scale seed library operation.[106] As an official with the Department of Agriculture explained, to have a sufficient sample size, labs typically test around 400 seeds.[107] Because library patrons generally only return several dozen seeds, having a test sample of 400 would be nearly impossible.[108]

The seed library maintained its operations using commercial seed until the state's seed law could be changed.[109] Meanwhile, the library joined with other organizations in Minnesota to bring awareness to the seed law.[110] The city councils of Duluth, Minneapolis, and St. Paul all passed resolutions requesting the state to amend the law.[111] Furthermore, Seed Savers Exchange and the Sustainable Economies Law Center provided support for the effort, as did Duluth's state senator, Roger Reinert.[112] The effort also included discussions between the Duluth Seed Library, the Department of Agriculture, and trade

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101. *See* Kraker, *supra* note 2.

102. MINN. STAT. § 21.82-83 (2017); MINN. STAT. § 21.87(a)(4) (2017).

103. *See, e.g.* Christopher D. Cook, *Seed Libraries Fight for the Right to Share*, CORNUCOPIA INST. (Feb. 20, 2015), https://www.cornucopia.org/2015/02/seed-libraries-fight-right-share/ (describing the seed library located on the White Earth Indian Reservation in northern Minnesota); Grimler, *supra* note 5; *Seed Library*, FERGUS FALLS PUB. LIBR., http://www.ffpubliclibrary.org/seedlibrary.html (last visited Jan. 20, 2018) (describing seed library in Fergus Falls, Minnesota); *Seed Library*, GROWING WEST SIDE, http://growingwestside.com/seed-library/ (last visited Jan. 20, 2018) (describing seed library at the Riverview Library in St. Paul, Minnesota); *Services Available at the Willmar Public Library*, WILLMAR PUB. LIBR., http://www.willmarpubliclibrary.org/serv.html (last visited Jan. 20, 2018) (describing seed library in Willmar, Minnesota).

104. *See* Dan Kraker, *Duluth Library's Seed Sharing Program Hits a Hurdle,* MPR NEWS (Nov. 30, 2014), https://www.mprnews.org/story/2014/11/30/duluth-librarys-seed-sharing-program-hits-a-hurdle.

105. *See id.*

106. *Id.*

107. *Id.*

108. *Id.*

109. *See* Trish Popovitch, *The Little Library That Could: Advocates Change Seed Exchange Laws in Minnesota*, SEEDSTOCK (May 3, 2015), http://seedstock.com/2015/05/03/the-little-library-that-could-advocates-change-seed-exchange-laws-in-minnesota/.

110. *Id*.

111. *Id.*

112. *Id.*

associations who represented big seed companies.[113] Finally, in April 2015, the House and Senate's Agriculture committees passed the exemption for seed libraries, which was signed by the governor.[114]

2. Nebraska

In 2015, Nebraska also adopted an amendment to its seed law to allow for seed libraries.[115] The Nebraska Seed Law now defines "seed library" and specifies that "[s]ale does not mean the donation, exchange, or other transfer of seeds to or from a seed library or among members of, or participants in, a seed library."[116]

The senator who sponsored the bill explained that the Nebraska Seed Law intended to regulate seed companies and that the "old legislation didn't foresee" seed libraries."[117] Prior to the bill's passage, at least three seed libraries operated in Nebraska, but librarians hesitated to launch new ones because of the uncertain legal environment.[118]

3. Iowa

In 2015, Iowa amended its state seed regulations to permit seed libraries.[119] An Iowa library district or Iowa library board is eligible to form a seed library under the revised regulation.[120] An emergency feeding organization or food bank is also eligible to form a seed library, as long as the organization is recognized by the Iowa department of revenue.[121] A qualified seed library is not subject to labeling or testing requirements, but the seed library is subject to permitting.[122] The permits are free, but do require annual renewals.[123]

4. Illinois

The Illinois General Assembly enacted Public Act 099-0827 which became effective on August 16, 2016.[124] The Act created a distinction in the state's Seed

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113. *Id.*

114. MINN. STAT. § 21.87 (2017).

115. NEB. REV. STAT. § 81-2, 147.05(1)(d) (2017).

116. NEB. REV. STAT. § 81-2, 147.01(28) (2017).

117. Peters, *supra* note 2.

118. *Id.*

119. IOWA ADMIN. CODE r. 21-40.16(199) (2017).

120. *Id.*

121. *Id.*

122. *Id.* (describing the seed library must meet certain additional requirements, such as distributing pesticide-free seed, distributing seed for planting in Iowa, and ensuring that each seed library patrons receives no more than two pounds of seeds per year).

123. *Seed Regulatory Program*, IOWA DEP'T OF AGRIC., http://www.iowaagriculture.gov/Entomology/seedRegulatory.asp. (last visited Feb. 2, 2018).

124. Ill. Pub. Act. 099-0827 (2016); Public Act 099-0827, ILLINOIS GEN. ASSEMBLY, http://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=099-0827&GA=99 (last visited Dec. 16, 2017); Bill Status of SB3130, Ill. Gen. Assembly, http://www.ilga.gov/legislation/BillStatus.asp?DocNum=3130&GAID=13&DocTypeID=SB&LegId=96472&SessionID=88&GA=99 (noting effective date).

Law between commercial seed operations and non-commercial seed sharing and exempted non-commercial seed sharers from the law's labeling requirements.[125] The Act states that non-commercial means that "no monetary consideration or compensation is transferred in return for receiving seeds."[126] The Act further clarifies that non-commercial seed sharing "does not include seed sharing in which the person participating in the seed sharing expects or creates the expectation that seeds must be returned in exchange for receiving seeds or when the distribution of seed is given as compensation for work or services rendered."[127] In other words, while a seed library in Illinois may dole out seeds, the seed library cannot ask the patron to return seeds after harvest time.[128]

The Illinois Department of Agriculture initially opposed the seed library exemption, arguing seed libraries and exchanges should have a mechanism in place for tracing the seeds.[129] Specifically, the Department raised the concern of the risk of spreading of noxious weeds and the ability of record-keeping to allow the Department to trace any outbreak back to its source.[130] In response, the legislature included a provision requiring the seed librarian or seed swap event organizer to "adopt labeling or record-keeping standards to identify the year, species or common name, and source of any non-commercially packaged seed" and "make this information available to the Department upon request in the course of any investigation" of Seed Law violations.[131]

5. California

In September 2016, California became the most recent state to pass seed-sharing legislation, the Seed Exchange Democracy Act.[132] The Act amended California's Food and Agricultural Code to exempt "[s]eed distributed or received by noncommercial seed sharing activity."[133] In support of this exemption, the bill noted that "[n]oncommercial seed sharing activity contributes significant value to the health of our communities and to the resilience of our food system."[134]

The Act was a departure from California's previous stance on seed sharing.[135] As opposed to the revised version allowing an exemption for non-

125. *See Seed Sharing Protections Bills Passes Senate*, ST. J.-REG. (Apr. 21, 2016), http://www.sj-r.com/news/20160421/seed-sharing-protections-bill-passes-senate.

126. 505 ILL. COMP. STAT. 110 / 2.121-5 (2017).

127. *Id.*

128. *See id.*

129. Drew Zimmerman, *Illinois Bill Aims to Help Local Seed Libraries Flourish*, PEORIA J. STAR (Apr. 10, 2016), http://www.pjstar.com/news/20160410/illinois-bill-aims-to-help-local-seed-libraries-flourish.

130. *See id.*; *Seed Sharing*, *supra* note 125.

131. 505 ILL. COMP. STAT. 110 / 7(b) (2017).

132. Christina Oatfield, *Governor Brown Signs Seed Exchange Democracy Act*, SUSTAINABLE ECONOMIES LAW CTR. (Sept. 12, 2016), http://www.theselc.org/governor_brown_signs_seed_exchange_democracy_act.

133. CAL. AGRIC. CODE § 52451(f) (Deering 2017).

134. *Id.* § 52288(c) (Deering 2017).

135. *Compare* CAL. AGRIC. CODE § 52451 (Deering 2017) *with* CAL. AGRIC. CODE § 52451 (2007–2016).

commercial seed sharing, the notes to the former version of the statute explain that the only exemptions from the California Seed Law's labeling requirements were for the "occasional sale of seed grain by the producer of the seed grain to his neighbor for use by the purchaser within the county of production."[136] The law defines "neighbor" for the purposes of labeling requirements as someone who lives not more than three miles away.[137] Thus, without this 2016 amendment, seed libraries could not legally exist in California.

6. Pennsylvania

Pennsylvania has taken a different approach, legalizing seed libraries first via a protocol and then by Department of Agriculture pronouncement.[138] In April 2015, the Cumberland County (Pennsylvania) Library System founded the Simpson Seed Library.[139] The seed library lent seeds to patrons with the expectation that patrons would then return replacement seeds to the library after harvest time.[140] In the eyes of the Pennsylvania Department of Agriculture, the "return" aspect of the program violated the state's Seed Act.[141]

Unlike the legislative fixes in other states, the Pennsylvania Department of Agriculture issued a Seed Library Protocol in July 2014 to resolve the issue and to provide space in which the seed library could operate.[142] Under the protocol, the library had to make two key changes. First, the library had to start each year with fresh seeds instead of requesting that members return seeds to the library.[143] Those seeds needed to be labeled.[144] The second change shifted the library's role from distributor to facilitator.[145] That change allowed the library to organize seed swaps to encourage patrons to swap seeds instead of the library collecting and redistributing seeds.[146] As part of the seed swap, the library would encourage patrons to plant those seeds in the next growing season and then bring seed back to the next year's seed swap.[147]

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136. *Legislative Counsel's Digest*, Cal. AB-2470 (2014), https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB2470.

137. CAL. AGRIC. CODE § 52452(d) (Deering 2017).

138. PA. DEP'T OF AGRIC. BUREAU OF PLANT INDUSTRY, SEED LIBR. PROTOCOL (2014), http://www.agriculture.pa.gov/Protect/PlantIndustry/Seed/Documents/Seed%20Library%20Protocol%2007-17-14.pdf; *Victory for PA Seed Libraries*, PUB. INTEREST LAW CTR., https://www.pubintlaw.org/cases-and-projects/law-center-supports-seed-libraries-and-promotes-local-food-systems/ (last visited Jan. 31, 2018).

139. Greg Landgraf, *Agriculture Regulators in Minnesota and Pennsylvania Warn Libraries About Their Seed-Sharing Program*, AM. LIBR. MAG. (Dec. 8, 2014), https://americanlibrariesmagazine.org/2014/12/08/seed-libraries-and-state-laws/.

140. *See* Naomi Creason, *Pa. Department Backs Seed Library Protocol as Reaction Grows*, SENTINEL (Aug. 5, 2014), http://cumberlink.com/news/agriculture/pa-department-backs-seed-library-protocol-as-reaction-grows/article_d3acf6fc-1cf2-11e4-adf9-0019bb2963f4.html.

141. *Id.*

142. *See* PA. DEP'T OF AGRIC. BUREAU OF PLANT INDUSTRY, *supra* note 138.

143. *Id.*

144. *See* Creason, *supra* note 140.

145. *See* PA. DEP'T OF AGRIC. BUREAU OF PLANT INDUSTRY, *supra* note 138.

146. *Id*.

147. *Id.*

Although issuance of the protocol gave seed libraries in Pennsylvania guidance by which they could operate, advocates for seed libraries still viewed the Pennsylvania Seed Law as misapplied to seed libraries.[148] In 2015, the Pennsylvania Department of Agriculture clarified that Pennsylvania's seed law does not apply to seed libraries.[149]

IV. LOCAL ACCESS TO HEALTHY FOOD POLICY ENVIRONMENT

This Part explores the overall policy environment related to food justice. Part V profiles communities that have successfully incorporated seed libraries as components of healthy food access policies.

A food environment is "the collective physical, economic, policy and sociocultural surroundings, opportunities and conditions that influence people's food and beverage choices and nutritional status."[150] As expected, unhealthy food environments, characterized by cheap, energy-dense, nutrient-poor foods, foster unhealthy diets, whereas healthy food environments foster healthy diets.[151] Thus, there is increased interest in policymakers in developing food environment interventions, and "[n]ovel approaches for curtailing obesity disparities are desperately needed."[152] In addition to a health issue, it is also a social justice issue.[153]

Although it cannot solve the obesity epidemic single-handedly, access to affordable, nutritious food is a key part of the solution.[154] In considering the impact of local efforts to provide access to healthy food, three key factors emerge: (1) Price (with a consideration of quality); (2) proximity (or available transportation); and (3) cultural appropriateness.[155]

The first factor that impacts healthy food access is price.[156] A healthy diet costs about $1.48 more per person per day, or just over $2,000 for a family of four per year, than an unhealthy diet.[157] Generally, rising prices cause consumers

148. Letter from Brian Snyder, Exec. Director, Pa. Association for Sustainable Agriculture, to the Honorable Russell C. Redding, Sec., Pa. Dept. of Agriculture (June 16, 2015), https://www.pubintlaw.org/wp-content/uploads/2015/06/Seed-Library-Letter-to-Sec-Redding-PASA-6-16-15-2.pdf.

149. *Ag Secretary Promotes Seed Libraries as Valuable, Community-Led Resource to Local Gardeners*, PA. PRESSROOM (Mar. 8, 2016), http://www.media.pa.gov/pages/Agriculture_details.aspx?newsid=402.

150. Boyd Swinburn et al., *Monitoring and Benchmarking Government Policies and Actions to Improve the Healthiness of Food Environments: A Proposed Government Healthy Food Environment Policy Index*, 14 OBESITY REVIEWS 24, 25 (2013).

151. *Id.*

152. Alia, *supra* note 65, at 335; Darcy A. Freedman et al., *Assessing Readiness for Establishing a Farmers' Market at a Community Health Center,* 37 J. COMMUNITY HEALTH. 80, 80 (2012).

153. *See* POLICYLINK, *supra* note 1, at 6, 9 (explaining that "[t]he evidence is clear that many communities—predominantly low-income, urban communities of color and rural areas—lack adequate access to healthy food, and the evidence also suggests that the lack of access negatively impacts the health of residents and neighborhoods").

154. *See id.* at 12.

155. *Id.* at 15.

156. Swinburn et al., *supra* note 150, at 29.

157. James D. Wright et al., *Food Deserts: What is the Problem? What is the Solution?*, 53 SOC'Y 171, 178 (2016).

to purchase less of a food, whereas falling prices cause consumers to purchase more of a specific food.[158] For instance, a study of low-income consumers in a Detroit food desert revealed that a customer's fruit consumption increased with either a higher income or a lower fruit price.[159] A consumer's decision to purchase a specific food is also impacted by the price differential; thus, the difference in price between healthy and non-healthy options could impact the consumer's decision to purchase the non-healthy option instead.[160] However, the impact of price on healthy food access is also evident from the opposite perspective. For instance, a program in Massachusetts provided coupons to lower-income women and children and the elderly to purchase produce at an outdoor farmers market, resulting in a thirty percent increase in fruit and vegetable purchases.[161]

The second factor that impacts healthy food access is proximity: "[*W*]*here* one lives is strongly associated with one's ability to access and ultimately consume healthy foods."[162] Six to nine percent of households in the United States lack access to healthy food.[163] Further, almost thirty million Americans in low-income areas live more than a mile away from a supermarket.[164] If healthy food is not available in one's community and transportation to another community is not available, then one is forced to eat unhealthy foods.

The third factor that impacts healthy food access is culture. The influence of culture can be seen in both what is deemed culturally appropriate to eat and in cultural influences for why people eat what they do.

> In some cultures, diet consists almost entirely of meat and fish—no produce allowed! Some Native American tribes ate diets comprised mainly of seeds, roots, and nuts. In Europe and North America, meat comes mostly from beef, pork, lamb and chicken, but in other cultures, snakes, monkeys, anteaters, mice and rats are all acceptable protein sources. South American Indians eat monkeys, iguanas, grubs, bees and head lice; Aboriginals of Australia eat lots of insects.[165]

Beyond that, "[f]ood consumption also carries cultural identity and when people are told that they need to change what and how they eat, some piece of their cultural identity gets chipped away and discarded."[166] For instance, an Iranian woman reported that, because of health issues, she should not eat rice; however, she explained that she could not stop eating rice because it was a habit

158. A. Lee et al., *Monitoring the Price and Affordability of Foods and Diets Globally*, 14 OBESITY REVS. 82, 83 (2013).

159. POLICYLINK, *supra* note 1, at 15 (citing Dave Weatherspoon et al., *Price and Expenditure Elasticities for Fresh Fruits in an Urban Food Desert*, 50 URB. STUD. 88, 88–106 (2013)).

160. *See* Lee et al., *supra* note 158, at 83.

161. *Id.* at 82, 84.

162. Darcy A. Freedman, *Local Food Environments: They're All Stocked Differently*, 44 AM. J. COMMUNITY PSYCHOL. 382, 391 (2009).

163. POLICYLINK, *supra* note 1, at 6.

164. *Id.*

165. Wright et al., *supra* note 157, at 179.

166. *Id.*

and, without it, her stomach would not feel full.[167] Relatedly, people from working class backgrounds can struggle to reduce their meat consumption because a lack of meat at a meal often meant an inability to afford it.[168]

It is clear from the healthy food access research that "a comprehensive approach is the key to achieving the greatest impacts."[169] "The local economy, development resources, community leadership and support, political will, and other factors determine what is possible and viable."[170] Popular strategies for community food security tend to include local agriculture.[171] Some examples include expanding farmers markets, promoting community gardening, and encouraging urban agriculture.[172] As another example, researchers conducted a study from 2011–2013 to document how food banks in the United States utilized practices of gleaning, gardening, and farming.[173] The findings suggested that

> [F]ood banks' gleaning, gardening, and farming programs are alternately challenging and reinforcing longstanding patterns of food relief. Most of the local produce obtained through these programs effectively constitutes additional commodity surplus. This enables some food banks to distribute more diverse and nutritionally healthier foods as well as increase the total quantity of food distributed. These programs change food banks' relationships with their suppliers, but not so much with the recipients of their food. Most gleaning, gardening, and farming programs perpetuate food banks' reliance on middle class volunteers and charitable donations. However, some food banks are playing new and expanded roles in building community food security and promoting food justice, especially through programs that invest in building poor people's capacity to garden and farm (and cook) themselves. This represents a significant departure from most food banks' traditional missions, operations, and politics. It suggests various ways that hunger relief systems have the potential to promote community food security more broadly.[174]

Thus, communities should consider the latter advice when developing a strategy for healthy food access.

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167. Maryam Farahman et al., *Barriers to Healthy Nutrition: Perceptions and Experiences of Iranian Women*, BMC PUB. HEALTH, Dec. 2012, at 5.

168. Wright et al., *supra* note 157, at 179–80.

169. POLICYLINK, *supra* note 1, at 19.

170. *Id.* at 7.

171. Domenic Vitiello et al., *From Commodity Surplus to Food Justice: Food Banks and Local Agriculture in the United States*, 32 AGRIC. & HUM. VALUES 419, 420 (2015).

172. POLICYLINK, *supra* note 1, at 7.

173. Vitiello et al., *supra* note 171, at 420.

174. *Id.* at 420, 425 (emphasis added) (describing an organization that plants community orchards, allows people to harvest and preserve their own food, and hosts workshops on caring for fruit trees).

V. LOCAL ACCESS TO HEALTHY FOOD POLICY ENVIRONMENT: CASE STUDIES

The following three case studies demonstrate how seed libraries can contribute to food-secure communities, in cities, suburbs, and small towns.

A. Toronto, Ontario

The push to create the Toronto Seed Library began in 2012, initiated by university students and members of Occupy Gardens Toronto.[175] The first Toronto Seed Library event, an unpermitted seed swap at a City Hall library branch, reflected its roots in the Occupy Gardens movement.[176] That event aside, the approach of the Toronto Seed Library has been to "work within the existing system . . . to create something that could be sustained and win popular support."[177] By 2014, the Toronto Seed Library already had fourteen branches.[178] The Library now has over twenty branches.[179] In its first four years of operation, it has dispensed over 100,000 seed packets.[180] Of those packets dispensed, the Library experiences a fifteen to twenty percent return rate of replacement seed.[181] The Library also includes an outreach and educational component. In its first two years, the Toronto Seed Library hosted fifty community events, including workshops and webinars.[182]

While the Toronto Seed Library was started by private citizens, it is easy to see how it complements other city initiatives. Toronto has a policy environment that is favorable to urban agriculture and that promotes food security.[183] As early

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175. *A Brief History*, TORONTO SEED LIBR., http://www.torontoseedlibrary.org/about/a-brief-history-future/ (last visited July 5, 2017).

176. Katherine Berger, A Moist Seedy Endivor: The Making of the Toronto Seed Library 32 (Sept. 9, 2015) (unpublished M.A. thesis, York University) (on file with the York Space Institutional Repository), https://yorkspace.library.yorku.ca/xmlui/handle/10315/30291; TORONTO SEED LIBR., *supra* note 175.

177. Alia Karim, Occupy Gardens? A Case Study of the People's Peas Garden in Toronto, Canada 58 (Nov. 2014) (unpublished M.A. thesis, Dalhousie University) (on file with the Dalhousie University library), https://dalspace.library.dal.ca/bitstream/handle/10222/56040/Karim-Alia-MES-SRES-Nov-2014.doc.pdf?sequence=1.

178. TORONTO SEED LIBR., *supra* note 175; *See also* STHAPIT ET AL., *supra* note 16, at 88–93 (describing the Toronto Seed Library's beginnings, operations, and goals). The City of Toronto has a sophisticated and well-developed food policy. *See, e.g., infra* notes 179–81. Although Toronto's seed library operates under Canadian law, the case study demonstrates how a well-organized seed library can contribute to the food environment in a major world city.

179. May Warren, *Behind One Toronto Library's Seedy Initiative with a Lot of Growth Potential*, METRO NEWS (Aug. 19, 2016), http://www.metronews.ca/news/toronto/2016/08/19/toronto-seed-library-lets-you-borrow-seeds.html.

180. *Id.*

181. Leandro Diaz-Matus, *From Toronto to Halifax: Seed Libraries Find Fertile Ground*, TORONTO OBSERVER (Dec. 3, 2014), http://torontoobserver.ca/2014/12/03/from-toronto-to-halifax-seed-libraries-find-fertile-ground/.

182. TORONTO SEED LIBR., *supra* note 175.

183. CITY OF TORONTO, TO PROSPERITY: TORONTO POVERTY REDUCTION STRATEGY 29–30 (2015), http://www.toronto.ca/legdocs/mmis/2015/ex/bgrd/backgroundfile-84626.pdf; *Food Strategy Background*, CITY OF TORONTO, https://www.toronto.ca/community-people/health-wellness-care/health-programs-advice/toronto-food-strategy/background/ (last visited Jan. 20, 2018).

as 1991, the city established the Toronto Food Policy Council ("TFPC" or "The Council").[184] In 2008, the city approved the development of a Toronto Food Strategy, with the goal of creating a "healthier and more sustainable food system."[185] The food system envisioned by the city becomes clear in the Food Strategy team's 2010 Report, which establishes the following goals: (1) "Support food friendly neighbourhoods"; (2) "[m]ake food a centerpiece of Toronto's new green economy"; (3) "[e]liminate hunger in Toronto"; (4) "[c]onnect city and countryside through food"; (5) "[e]mpower residents with food skills and information"; and (6) "[u]rge federal and provincial governments to establish health-focused food policies."[186]

The city's Poverty Reduction Strategy also reflects a commitment to urban agriculture: One of its nineteen recommendations for reducing poverty in Toronto is to "[i]ncrease access to affordable, nutritious and culturally appropriate food."[187] To that end, the city endorsed GrowTO, an urban agriculture plan set forth by the TFPC.[188] GrowTO, set forth in 2012, recognized the benefits of gardening, from the money saved from individuals growing their own food and from reduced healthcare costs, to increased neighborhood cohesion, and to improving the environment.[189]

In addition, the Council recognized that almost half of Toronto residents were foreign-born, bringing with them diverse knowledge and new crops, which are a vital component of Toronto's urban agriculture profile.[190] The Council made clear that "policies are indeed the backbone and framework that either support or hinder urban agriculture."[191] Specifically, the Council noted the impact of municipal and provincial policies, and this impact was reflected in the Council's four immediate goals.[192] The Council urged the city to develop an urban agriculture program, to create city policies supportive of urban agriculture, to incentivize (monetarily or otherwise) urban agriculture initiatives, and to create a website highlighting the benefits of and resources available for urban agriculture.[193]

184. *Toronto Food Policy Council*, CITY OF TORONTO, https://www.toronto.ca/community-people/health-wellness-care/health-programs-advice/toronto-food-strategy/toronto-food-policy-council/ (last visited Jan. 20, 2018),

185. *Food Strategy Background*, *supra* note 183.

186. *Id.*

187. TO PROSPERITY, *supra* note 183, at 29.

188. *Id.* at 30.

189. TORONTO FOOD POL'Y COUNCIL, GROWTO: AN URBAN AGRICULTURE ACTION PLAN FOR TORONTO 9–10 (Oct. 2012), http://www.toronto.ca/legdocs/mmis/2012/pe/bgrd/backgroundfile-51558.pdf.

190. *Id.* at 4.

191. *Id.*at 19.

192. *Id.* at 19–20.

193. *Id.* at 20.

B. Blue Island, Illinois

Blue Island, Illinois is located about fifteen miles from downtown Chicago.[194] In 2014, the Friends of the Library, along with gardener and community activist Anna Stange, established the Blue Island Seed Lending Library.[195] With support from the Blue Island Library and the local park district, the seed library started strong: More than 200 people attended its first seed swap event.[196]

Blue Island contains several food deserts.[197] Residents of those persistently poor areas must travel more than one mile to the nearest supermarket.[198] In response to this, the seed library also partners with the Blue Island Park District, which constructed raised beds at local community gardens.[199] These raised beds are available to anyone with either thirty dollars or a subsidy.[200] This addresses the seed library's mission to "make it affordable for people to grow their own healthy food."[201] It makes sense that individuals who are most impacted by a food desert are the same individuals who may not be able to afford to rent garden space and to purchase seeds; thus, this project fills that gap. Blue Island also reserves portions of its community gardens for volunteers to grow food for the local food pantry.[202]

C. Orangeburg, South Carolina

In 2015, the Orangeburg County Library in South Carolina opened its seed library.[203] Master Gardeners, Friends of the Library, and the local Clemson University Extension Service supported the seed library's opening.[204] The Library houses its seed collection in a repurposed card catalog and markets the seed exchange via red and white planters placed around the main entrance.[205]

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194. *Transportation and Transit*, CITY OF BLUE ISLAND, http://www.blueisland.org/about/transportation (last visited Sept. 4, 2017).

195. Charlotte Dove, *Blue Island Seed Lending Library*, SAVING OUR SEEDS, https://seeddiversity.wordpress.com/portfolio/blue-island-seed-library/ (last visited Jan. 20, 2018).

196. *Id*.

197. *Go to the Atlas*, U.S. DEP'T OF AGRIC., ECON. RES. SERV., https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas/ (last visited Jan. 20, 2018). "A food desert is a low-income census tract where either a substantial number or share of residents has low access to a supermarket or large grocery store." *Food Desert Locator*, U.S. DEP'T OF AGRIC. FOOD & NUTRITION SERV., https://www.fns.usda.gov/tags/food-desert-locator (last visited Jan. 20, 2018).

198. BENJAMIN F. EVANS ET AL., FOOD ACCESS AND HEALTH IN COOK COUNTY, ILLINOIS (2012), http://www.societyhealth.vcu.edu/media/society-health/pdf/PMReport_Cook_Co.pdf.

199. Slowik, *supra* note 54.

200. *Id.*

201. *Id.*

202. CITY OF BLUE ISLAND, *supra* note 64; Slowik, *supra* note 54.

203. Minnie Miller, *Digging In: Seed Saving Savvy*, TIMES & DEMOCRAT (Mar. 18, 2015), http://thetandd.com/news/digging-in-seed-saving-savvy/article_aadabae8-cd87-11e4-8881-33aff247b394.html.

204. *Orangeburg County Library Seed Exchange*, S.C. LIBR. ASS'N, http://www.scla.org/assets/docs/Garden_Brochure%20finishedforreal.pdf (last visited Jan. 20, 2018).

205. Minnie Miller, *Seed Exchange Today at OCL,* TIMES & DEMOCRAT (Mar. 3, 2015), http://thetandd.com/news/seed-exchange-today-at-ocl/article_d33bb8e0-582c-58d9-8cb9-ec9bde90f66d.html; *Orangeburg County Library, 510 Louis St. Orangeburg, SC 29115*, GOOGLE MAPS, http://www.google.

Patrons may "check-out" the planters, which resemble mini-barns.[206] The whole purpose of the seed library is to draw upon the area's rich agricultural history to reconnect patrons and community members with their agrarian roots.[207] The county library also offers related programming, such as monthly garden talks.[208]

The enthusiasm for this seed library and its mini-gardens seems incongruous with Orangeburg County's vegetable consumption.[209] In the United States, 22.6% of adults consume less than one serving of vegetables daily.[210] In comparison, in South Carolina, 27.3% of adults consume less than one serving of vegetables daily.[211] However, in Orangeburg County, 32.6% of adults consume less than one serving of vegetables daily.[212]

Orangeburg is home to the Right Choice, Fresh Start Farmers Market, a produce-only market that operates in the parking lot of a federally qualified health center.[213] The idea for the market, organized through a community-university partnership,[214] came from research that linked health outcomes with fresh produce access.[215] The Market's partner health clinic saw about 300 more patients each month.[216]

Further erasing barriers to healthy food is the incentive program implemented at the market: "[F]or the first $5 a person used of their SNAP or other nutrition assistance program benefits to purchase produce, they could receive an additional $5 to support additional produce purchases."[217] Four times as many SNAP dollars were spent at the farmers market after the incentive program was implemented.[218] The Market has also offered nutrition classes at local churches.[219]

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com/maps/place/Orangeburg+County+Library/@33.4955405,-80.8643487,17z/data=!3m1!4b1!4m5!3m4!1s0x88f8d5aee53a92cb:0xc097117527afca70!8m2!3d33.495536!4d-80.86216 (last visited Feb 8, 2018).

206. *Orangeburg County Library*, *supra* note 205.

207. S.C. LIBR. ASS'N, *supra* note 205.

208. Miller, *supra* note 205.

209. *See* S.C. DEP'T OF HEALTH AND ENVTL. CONTROL, 2013 ORANGEBURG COUNTY OBESITY FACTSHEET (last visited Feb. 8, 2018), https://www.scdhec.gov/health/docs/epi/obesity/orangeburg.pdf.

210. *Id.*

211. *Id.*

212. *Id.*

213. *See* Alia, *supra* note 65, at 337.

214. *Id.*

215. *See Right Choice, Fresh Start Brings More Than Produce to Orangeburg*, UNIV. OF S.C., http://cosw.sc.edu/knowledge-neighborhoods/news-archive/261-right-choice-fresh-start (last visited June 4, 2017) (describing project led by Professor Darcy Freedman's, the principal investigator of the Right Choice, Fresh Start Farmers' Market study. Of the project, she stated, "This is a way to provide basic preventative healthcare services–in an outside-the-box way." The market received grants from the Centers for Disease Control and Prevention and the National Institutes of Health.).

216. *Id.*

217. S.C. FOOD ACCESS TASK FORCE, ACCESS TO HEALTHY FOOD IN SOUTH CAROLINA 5 (Amy Armstrong et al. eds., 2014), http://www.scfoodaccess.com/uploads/2/3/0/2/23029886/hffi_statewide_report.pdf.

218. *Id.*

219. Princess B. Williams, *Right Choice Fresh Start Farmers Market Providing Free Nutrition Classes to Churches*, TIMES & DEMOCRAT (July 24, 2015), http://thetandd.com/lifestyles/right-choice-fresh-start-farmers-market-providing-free-nutrition-classes/article_74e8b228-78ab-59a0-8aa8-6c28978d4c2a.html.

The outreach arm of South Carolina State University has also partnered with the South Carolina Department of Health and Environmental Control to offer a six-week cooking course.[220] As part of the course, participants visited a local grocery store to purchase nutritious ingredients on a ten-dollar budget.[221] With the guidance of a nutritionist and a chef, "[p]articipants learned how to develop strategies and economical techniques for healthy meals."[222]

VI. POLICY RECOMMENDATIONS

In response to an assessment of "the impact of a new government-subsidized supermarket in a high-need area," one commentator on the assessment noted that "'[i]ncreasing access to fresh food does not guarantee that people have the money, let alone the time and knowledge, to take advantage of it.'"[223] But research shows that a comprehensive approach to food justice, incorporating a variety of strategies, can help.[224] Farmers markets and community gardens have been successful because they address the price problem and because they often come with education and community-building initiatives.[225] It makes sense, then, that a seed library is a natural way to extend that success, especially when paired with educational programming and access to a gardening plot. In other words, a seed library helps to eliminate the cost barrier that can prevent customers from purchasing healthy foods in grocery stores. Also, the location of the seed library and of the associated community gardens is important, since proximity is a factor in people choosing healthy food options.[226]

Furthermore, because seed libraries require an investment of time and energy, they create buy-in: If a gardener spends months convincing a vegetable to grow, then that gardener is more likely to eat that vegetable once it is mature. At a harvest celebration dinner in a semi-rural Kentucky city for a community garden grown by Boys and Girls Club members, "faculty were surprised, mystified, and a tad horrified to hear a mother scolding her child as she reached for a ripe cherry tomato. As she pushed the fruit out of her child's hand, she exclaimed, '[d]on't eat that; it's nasty!'"[227] Thereafter, the Boys and Girls Club's executive director organized a game in which the children ate the vegetables that

220. Michael Fairwell, *Cooking Matters: Class Teaches How to Prepare Healthy Food*, TIMES & DEMOCRAT (May 31, 2016), http://thetandd.com/news/local/cooking-matters-class-teaches-how-to-prepare-healthy-food/article_bffa5b06-0506-5d0a-a6c1-b040f9efaf3a.html; *Extension*, S.C. STATE UNIV., http://www.scsu.edu/1890/extension.aspx (last visited July 1, 2017) (explaining that the 1890 Research and Extension is the outreach arm of South Carolina State University, whose programs provide learning opportunities to limited-resource clients to improve their level and quality of living).

221. *Id.*

222. *Id.*

223. Wright, *supra* note 157, at 176; Brian Elbel et al., A*ssessment of a Government-Subsidized Supermarket in a High-Need Area on Household Food Availability and Children's Dietary Intakes*, 18 PUB. HEALTH NUTRITION 2881, 2881 (2015).

224. *See* POLICYLINK, *supra* note 1, at 19.

225. *See* Alia, *supra* note 65, at 340–41; DINÉ POL'Y INST., *supra* note 47, at 75–76.

226. Freedman, *supra* note 162, at 391.

227. Gayle Mallinger & Molly Kerby, *The Harvest is the Best Teacher: A Narrative on Food Insecurity and Community Gardening with Children and Adolescents*, 20 REFLECTIONS: NARRATIVES PROF'L HELPING 70, 70, 74 (2016).

they grew.[228] This anecdote highlights that, in the time spent cultivating produce, the gardener can also build connections within the gardening community and learn about nutrition and other food-related topics.[229] Thus, beyond just providing produce, these seed library and community gardening initiatives can encourage healthy eating generally. In addition, seed libraries can carry seeds that are culturally appropriate and may not be available commercially.[230]

One overarching policy recommendation is to connect the work that a seed library does in a U.S. community with the work that seed libraries do around the world. For instance, one seed librarian described the work of a seed library as "whimsical" and, indeed, there are elements of fancy and creativity in repurposing a card catalog into a seed library.[231] However, seed libraries in communities around the United States are also doing work to protect against climate change, preserve biodiversity, and provide a food source for low-income neighbors.[232] Thus, both seed librarians and policymakers should appreciate seed libraries' true importance.

Legislators must recognize that important work, as well, and adopt the Recommended Uniform State Seed Law or otherwise create an exemption for non-commercial seed sharing under a state's seed law.[233] Another recommendation would be for state Departments of Agriculture to follow the Pennsylvania model and proactively issue guidance for prospective seed librarians and for those seed librarians who currently operate in that "legal grey area."[234] These suggestions serve two functions. First, they take away some risk in operating a seed library. Second, enacting a new statute, amending an existing statute, or issuing a protocol or other guidance raises awareness of seed libraries.

The Illinois, Nebraska, Minnesota, Iowa, and California statutes and the Pennsylvania model demonstrate the various forms that state action can take. In Illinois, the Act requires that seed libraries have a mechanism for tracing the seeds.[235] The Recommended Uniform State Seed Law also requires "[s]ome form of reference identification that provides traceability."[236] This provision is important, as it would allow the Department of Agriculture to locate the source of

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228. *Id.*

229. *Id.*

230. *See* K. Heather Devine, *Vermont Food Access and the "Right to Food": Using the Human Right to Food to Address Hunger in Vermont*, 41 VT. L. REV. 177, 185-86 (2016) (writing that "[f]ood access is not adequate if the people cannot access food that conforms to their cultural traditions.").

231. Hartnett, *supra* note 11.

232. *See Richmond Grows Seed Lending Library*, RICHMOND GROWS, http://www.richmondgrows seeds.org (last visited Oct. 31, 2017); *Our Story*, NATIVE SEEDS/SEARCH, http://nativeseeds.org/about-us/our-story (last visited Dec. 15, 2017).

233. *See, e.g.*, Bishop, *supra* note 97 (calling for local governments to enact legislation to protect seed libraries).

234. BUREAU OF PLANT INDUS., PA. DEP'T OF AGRIC., SEED LIBRARY PROTOCOL (2014), http://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/agronomic-products/Seed/Documents/Seed%20Library%20Protocol%2007-17-14.pdf; Janelle Orsi and Neil Thapar, SUSTAINABLE ECON. LAW CTR, *Setting the Record Straight on the Legality of Seed Libraries*, SHAREABLE (Aug. 11, 2014), https://www.shareable.net/blog/setting-the-record-straight-on-the-legality-of-seed-libraries.

235. ILL. COMP. STAT. 505 110 / 7(b) (2017)

236. ASS'N OF AM. SEED CONTROL OFFICIALS, *supra* note 93 at 10.

a noxious weed outbreak and prevent its spread.[237] Therefore, states should include the provision from the model law in any future legislation or protocols.

Statutes also vary on whether seed libraries are allowed to accept returned seed. For instance, the Recommended Uniform State Seed Law provides that seed libraries "may not expect, or create the expectation, that seeds must be returned in exchange for receiving seed"; however, it does not explicitly prohibit a seed library from accepting seed from a patron.[238] In contrast, the 2014 Pennsylvania protocol required that seed libraries start with fresh seeds each year before the Department of Agriculture updated its position to clarify that the Seed Law did not apply to seed libraries.[239] Seed libraries are exempted altogether from the Nebraska seed law.[240] If one function of seed libraries is to conserve plant species, then legislatures need to consider whether this can be accomplished without seed libraries accepting seed.[241] This is especially relevant if the goal is to protect local varieties that may not be commercially available.[242] If the goal is to promote biodiversity and preserve locally adapted varieties, then the Nebraska model would provide the most open route to do this. Regardless, states should allow some mechanism by which people can share seeds.

There is another reason that state seed laws should permit seed libraries to accept returned seed, as well. One article, in discussing food banks, explains that the model has been for food banks to rely on middle class volunteers and charity; however, it describes that some food banks have moved to a new model of building capacity in food bank patrons.[243] The same principle applies to seed libraries. Instead of just supplying hand-outs of seeds, a seed library that accepts return seeds can accept those from high-, middle-, or low-income patrons. Everyone can contribute harvested seed to the seed library and thereby, regardless of income level, be an equal player in promoting community food security.

Creating an environment in which seed libraries can legally operate is a solid first step, as "[t]he development of an enabling policy and legal environment is most likely the greatest challenge that most community seed banks face."[244] Based on the experiences of current seed libraries, however, the success of a seed library requires more than a law.

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237. Zimmerman, *supra* note 129; *Seed Sharing Protections Bill Passes Senate*, ST. J.-REG. (Apr. 21, 2016, 9:14 PM), http://www.sj-r.com/news/20160421/seed-sharing-protections-bill-passes-senate.

238. ASS'N OF AM. SEED CONTROL OFFICIALS, *supra* note 93 at 4.

239. *See* SEED LIBRARY PROTOCOL, *supra* note 234; *Ag Secretary Promotes Seed Libraries as Valuable*, *supra* note 144.

240. NEB. REV. STAT. § 81-2, 147.01(28) (2017).

241. *See* Vernooy et al., *Roles of Community Seed Banks*, *supra* note 15, at 649; DIVERSIFOOD, *supra* note 6.

242. Hartnett, *supra* note 11; *See* BANKING FOR THE FUTURE, *supra* note 11, at 4.

243. *See* Vitiello et al., *From Commodity Surplus*, *supra* note 171, at 420, 425 (describing an organization that plants community orchards, allows people to harvest and preserve their own food, and hosts workshops on caring for fruit trees).

244. Vernooy et al., *Roles of Community Seed Banks*, *supra* note 15, at 650.

One unique aspect of seed libraries in the United States is that many are housed in traditional lending libraries.[245] This makes practical sense, as the seed library can be open whenever the library is open and can use the existing infrastructure.[246] Hosting seed libraries could also help book libraries stay relevant.[247] Both promote community enrichment, information-sharing, and literacy, whether related to words or botany.[248]

Because traditional librarians may be drawn to starting a seed library for a variety of reasons, seed librarians should appreciate the broad potential that seed libraries have for preservation, seed and food sovereignty, and promotion of access to healthy foods. A survey of seed librarians revealed that 79.7% of respondents thought people in their communities lacked food security.[249] Of the survey respondents who perceived food insecurity in their communities, 81.3% felt that the seed library had the potential to help, but only 46.5% felt that the seed library was contributing to a food-secure community.[250] Asked whether the seed library pursued low-income families as patrons, one librarian said, "No, but now that you've given me the idea I will!"[251] In contrast, however, Richmond Grows seed library explains its "intention to grow more local seed for the benefit of the community" by "focusing on preserving varieties that have cultural significance or are rare or unusual while increasing food security and local resilience."[252] Still, the survey shows that opportunities exist and community policymakers should remain attuned to those opportunities to allow all community members to access nutritious foods.

A follow-up policy recommendation is to educate seed librarians on the laws related to seed libraries. For instance, the Recommended Uniform State Seed Law recommends seed libraries display a sign that states that "patented seed or varieties protected by the Plant Variety Protection Act will not be accepted or distributed without permission of the certificate holder."[253] Thus, the seed librarian needs to understand the intellectual property protections for seeds as well as the requirements of the Federal Seed Act.[254]

As stated above, the seed library must be supported by other urban agriculture initiatives, oral history projects, or educational programming. As an example of robust programming, the Mountain View Public Library in California supports its seed library by plant exchanges, crop swaps, and lectures by master

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245. *Sister Libraries,* SEED LIBRARIES, http://seedlibraries.weebly.com/sister-libraries.html (last visi-ted Dec. 15, 2017)

246. *See, e.g.*, RICHMOND GROWS, *supra* note 232.

247. Luke Runyon, *How to Save a Public Library: Make It a Seed Bank*, NPR, (Feb. 2, 2013, 5:17 AM), https://www.npr.org/sections/thesalt/2013/02/02/170846948/how-to-save-a-public-library-make-it-a-seed-bank.

248. *See id.*; Emily Weak, *Simple Steps to Starting a Seed Library*, PUB. LIBRS. ONLINE (Jan. 5, 2015), http://publiclibrariesonline.org/2015/01/simple-steps-to-starting-a-seed-library.

249. Emily Roberson, *Seed Libraries and Food Insecurity: An Emerging Solution to an Enduring Problem* 1, 46 (May 2016) (unpublished honors thesis, University of South Dakota), https://www.esterlibrary.org/wp-content/uploads/2017/02/Seed-Library-Thesis-Final-Draft.pdf.

250. *Id.* at 47–48.

251. *Id. at* 52.

252. RICHMOND GROWS, *supra* note 232.

253. ASS'N OF AM. SEED CONTROL OFFICIALS, *supra* note 93, at 10.

254. Federal Seed Act, 7 U.S.C. § 1571–75 (2012).

gardeners and other gardening experts. One speaker discussed seed saving, while another presented on starting plants from seeds and on kitchen gardens.[255] Seed library supporters also toured a nearby fire station's garden and are considering creating school gardens and gardening programs for kids.[256] In Oregon, Grow Portland is creating a special collection of seeds that have unique ties to the Portland area, such as those that have great adaptability to local conditions, those that immigrants brought to the area, or those that have links to important local history.[257] Grow Portland is also interested in interviewing gardeners about those special seeds.[258] Similarly, Blue Ridge Women in Agriculture in North Carolina supports its seed library with an oral history project.[259]

Since many people do not own or have access to land to plant their seeds, policymakers should consider adding community gardens on open public land. Seed libraries should also teach patrons best practices for container gardening, a method appropriate for apartment balconies or front steps. In addition, seed libraries should consider providing low-income patrons with the materials necessary for container gardening. Certainly, seed libraries are not a standalone solution for food injustice; however, they can function as a low-cost arrow in the quiver of communities that want to create programming, enthusiasm, and support for healthy food access.[260]

VII. CONCLUSION

Around the world, seed libraries function as defenders against climate change, preservers of biodiversity, collectors of stories and local knowledge, and providers of food. However, the wording of state seed laws has stymied their spread within the United States. Beyond just legalizing their operations, however, policymakers must come to understand a seed library's potential, especially to promote food justice. As demonstrated by successes in Orangeburg, Toronto, and Blue Island, seed libraries can join farmers markets and community gardens as components of a broader strategy to promote access to healthy foods.

255. Weak, *supra* note 248.

256. *Id.*

257. *Seed Saving*, GROW PORTLAND, https://www.growportland.org/seed-saving (last visited Jan. 8, 2018).

258. *Id.*

259. *Do You Have a Seed Saving Story?*, SEED LIBR., http://seedlibrary.brwia.org/seed-saving-stories.html (last visited Oct. 31, 2017); *Seed Saving Stories – Blog*, SEED LIBR., http://seedlibrary.brwia.org/seed-saving-stories---blog (last visited Dec. 15, 2017).

260. *See* STHAPIT ET AL., *supra* note 16, at 30 (explaining that the materials and equipment needed for a seed library are often low-cost).