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**An Investigative and Comparative State Analysis of Environmental Justice Policy
Recommendations for Vermont Migrant Farmworkers**

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UVM Patrick Leahy Honors College CAS Undergraduate Thesis

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ABSTRACT:

This investigative analysis looks at Act 154, the Environmental Justice Law of Vermont and how migrant Latine dairy farmworkers can be better incorporated into its statute and implementation process. These recommendations are built off three sub research questions. The first question looks at environmental justice challenge research from migrant farmworker expert interviews and previous literature. The second question directly examines Act 154 with legislative documentation analysis, implementation meeting viewing, and VT policymaker interviews. This research shows how VT migrant farmworkers are included and why, as well as potential problems for a lack of VT migrant farmworker voices in the implementation process and law. The third question is a comparative state analysis with policy and governmental report reading comparing what Pennsylvania's EJ PA Policy has done to bring migrant farmworkers into the EJ conversation and how VT can apply these suggestions. Recommendations are given based off the three-pronged research approach that emphasizes how VT migrant farmworkers can be brought into increased meaningful participation under Act 154.

INTRODUCTION:

In Act 154: the Environmental Justice Law of Vermont, what actions or recommendations can aid migrant Latine¹ dairy agricultural workers in Vermont? This is the central question of my investigative analysis. To achieve this goal, I will be using three questions that will guide my research: what are the biggest environmental challenges that Vermont (VT) migrant Latine dairy farmworkers face? What has the state done on this issue and why? What have other states done with similar EJ issues for their migrant Latine dairy farmworkers?

Environmental justice (EJ) has many working definitions. The definition I will be using throughout this research is one that incorporates not only distribution of goods and services, but one that looks at the representation and procedures regarding EJ communities (Schlosberg, 2004). This definition helps guide my investigative analysis by looking at Act 154 in a larger sense, especially since the main facet of the law is representation of VT EJ communities by addressing disproportionate EJ challenges in VT state agencies (Act 154, 2022). The current implementation process is ensuring that environmental goods and harms are distributed more equitably. This distribution focus in Act 154 can be seen through the requirements for VT state agencies to disclose environmental spending. Thus, an all-encompassing definition of EJ can ensure that VT migrant farmworkers are not only protected from environmental bads but are also represented and included in the decision-making processes intended by the statute.

The history of incorporating EJ into Vermont's state-level political work has been a slow process. Act 154, or the Environmental Justice (EJ) Law of Vermont, has been the only piece of legislation to address environmental justice in Vermont. It was adopted in June 2022, making

¹ Using Latine in a manner to define individuals who have Hispanic or Latino origin. Latine is used as a gender-neutral term to describe this group.

Vermont one of the last of a handful states in the U.S. to adopt EJ legislation or policy (Mihaly, 2022; Sterling, 2022). Vermont has a history of maintaining a bucolic, rural image that has often excluded BIPOC and immigrant communities (Panikkar et. al., 2023). Vermont is also a state that is quite homogenous in its racial makeup, with 89.8% of Vermont identifying as white (U.S. Census Bureau, 2020; Panikkar et. al., 2023). There has also been a disproportionately low number of Black and Indigenous People of Color (BIPOC) in the Vermont General Assembly (Young Elected Leaders Project & Quinn, 2022). Vermont has a past littered with genocide, eugenics, Indigenous erasure, and exclusion of BIPOC communities during the Great Migration which has contributed to the white-majority demographics that is seen today (*Joint Meeting with the Advisory Council and Interagency Committee, 3/10/23, Part 1, 2023*). This racial history helps to understand why Vermont's political climate has done so little on EJ until the passage of Act 154 (*Joint Meeting with the Advisory Council and Interagency Committee, 3/10/23, Part 1, 2023*).

VT migrant farmworker environmental challenges of food security, transportation, housing issues, and chemical/toxics exposure were the main topics that had already been researched (Mares, 2019; Panikkar & Barrett, 2021). I wanted to further understand environmental challenges that these migrant farmworkers face such as climate change effects, climate disaster relief, and water and air quality. I conducted semi-structured interviews with stakeholders working on VT migrant farmworker issues to understand these lesser researched environmental challenges. By understanding all the environmental challenges VT migrant farmworkers face, I then describe how Act 154 can help alleviate these disproportionate struggles.

After gaining knowledge of EJ challenges, I look at what the state has done for migrant farmworkers and why these actions have been taken. These answers are found through semi-structured interviews with VT policymakers. I start with the intent of including VT migrant farmworkers in the testimony for the passage of the bill. I take a spotlight to Act 154 in seeing what it does and how VT migrant farmworkers are included in the statute, finding that they are not adequately included in its definition or implementation processes. I reviewed the implementation process with the creation of the Interagency EJ Committee (IAC) and EJ Advisory Council (AC) in Act 154 by watching their recorded public meetings. These meetings gave insights into how the potential representatives of VT migrant farmworkers are currently incorporating this EJ community into the law's implementation process through recommendations by the AC and IAC. I find that there is not a migrant farmworker representative position, so I investigate why migrant farmworker support organizations like Migrant Justice have not been included in Act 154's implementation work towards achieving the law's goals.

Lastly, I briefly compare Pennsylvania's EJ policy to Vermont's law to see if there are other viable solutions to migrant EJ concerns. Pennsylvania (PA) was chosen due to the similarities Vermont in dairy agriculture, the dependence upon migrant farmworkers for this production, and similar Northeast climates. I look at legal work, reports, and statutes in Pennsylvania to accomplish this short EJ policy comparison.

After reviewing this evidence, I find that VT migrant farmworkers have been left out of key EJ conversations in Vermont, especially surrounding the creation, passing, and implementation of the Environmental Justice Law of Vermont, or Act 154. Thus, I craft recommendations in a way that is workable for legislators to implement but ensures further

environmental justice protection for migrant dairy agricultural workers. In sum, I provide state policymakers with effective Act 154 policy recommendations from this investigative research for Vermont migrant agricultural workers that will be listed after the analysis of this research.

LITERATURE REVIEW:

The previous research can be split into my three research questions. For question one, environmental challenges have been somewhat established for migrant farmworkers, especially at a national level. There is some previous work on VT EJ migrant farmworker challenges, but this research does not look closely at water quality and climate change effects. I look at literature on why the state had not passed an EJ policy for question two but there was no research evaluating what Act 154 misses in covering all EJ communities through procedural, representative, and distributive measures. The literature on EJ in other states for question three is relatively robust and gives a broader sense of what problems other migrant farmworkers face and the policy solutions beyond Vermont.

Previous Research on EJ Challenges of VT Migrant Farmworkers:

Migrant farmworkers and their environmental challenges have been well understood on a national level. There has been literature detailing the toxicity of pesticides, which cover insecticides, herbicides, and fungicides, that workers are surrounded by while engaging in farming (Arcury & Quandt, 2003). Migrant agricultural workers nationally have also been known to live in rental homes surrounded by agricultural fields that are often in poor condition (Arcury & Quandt, 2003). Migrant Latine farmworkers are known to be at a higher risk to physical hazards with heat while working and have higher rates of exposure to viruses, bacteria, fungi, and parasites (Castillo et. al., 2021). They often live in fear of deportation and may then be unable to access federal, state, or local environmental aid because of their immigration status

(Castillo et. al., 2021). Environmental threats to farmworker health are increasing as the effects of climate change are increasing worldwide (Castillo et. al., 2021).

In Vermont, Teresa M. Mares' anthropological book, *Life on the Other Border: Farmworkers and Food Justice in Vermont*, investigated how migrant farmworkers in Vermont have struggled to access food due to their invisibility. Mares dives into one-on-one conversations with VT migrant farmworkers and those who work closely with them to describe what invisibility looks like in a rural state that lacks transportation, ethnic foods, easy access to health care, and diverse culture (Mares, 2019).

Other studies on Vermont migrant farmworkers have been conducted by the REJOICE coalition, which is a group of academics, researchers, organizations, and individuals invested in understanding environmental justice concerns with a focus on health issues for marginalized Vermont communities (Panikkar & Nelson, 2021; Panikkar & Barrett, 2021; Panikkar et al., 2023; Selle, 2020). These publications find that environmental health anxieties related to migrant agricultural dairy workers in Vermont include high rates of chemical and pesticide exposure, a lack of adequate housing infrastructure, a high risk of physical harm from animals, a lack of food affordability and accessibility, and a lack of access to transportation (Panikkar & Barrett, 2021; Panikkar et al., 2023; Selle, 2020).

“Precarious Essential Work, Immigrant Dairy Farmworkers, and Occupational Health Experiences in Vermont” is the most comprehensive piece of academic literature on environmental justice issues for migrant farmworkers (Panikkar & Barnett, 2021). The study analyzed surveys and interviews collected by the Vermont migrant rights organization, Migrant Justice (*Justicia Migrante*) (Panikkar & Barnett, 2021). These documents and reports from 2014-2019 were reviewed to find that migrant dairy agricultural workers were exposed to chemicals,

specifically iodine, formaldehyde, chlorine, and acid (Panikkar & Barnett, 2021). There were also records of migrant dairy farmworkers being overworked with little sleep while working in extreme heat or extreme cold conditions and living in homes in or near the barn (Panikkar & Barnett, 2021).

There has been an adequate amount of research done on understanding some of the broad environmental justice issues, especially related to the public health of these workers. Yet, no work was found regarding direct conversations with migrant farmworkers in Vermont about their environmental concerns with climate disasters and increased flooding due to climate change as well as air and water quality in depth.

Previous Work on the lack of a VT EJ Law Aiding Migrant Farmworkers until Now:

Teresa Mares' research shows that Vermont is full of migrant exclusion history. She also finds that VT policymakers in the past had not included migrant farmworkers in state government rhetoric or policy because they did not want to hurt the dairy industry that Vermont is reliant on (Mares, 2019). They also did not want to harm VT migrant farmworkers by exposing their undocumented status, giving them unwanted attention and potential increase for deportation efforts in the state (Mares, 2019). Little policy work has then aided migrant farmworkers, except for bias free policing and driver's licenses, because of the ideal of maintaining Vermont's beneficial agricultural economy, even if it means leaving out a sector of that economy's workforce from the conversation (Mares, 2019).

The lack of a VT EJ policy or law is stated in VT EJ research by providing data on why a VT EJ policy was and is needed. Vermont politicians have carefully cultivated the state's bucolic cultural image, which has led to bias and discrimination toward those who are not white (Panikkar & Barrett, 2021; Panikkar et al., 2023). Also, due to Vermont's rural, racial and

cultural homogeneity, environmental justice was not seen as an issue in Vermont because there is a lack of urban poor and BIPOC communities associated with traditional EJ movements (Kaleire Ram, 2008). The environmental justice research that has been conducted in Vermont typically suggests in its concluding statements that policymakers must be consulted to ensure that this data is implemented into policy in a way that addresses these specific obstacles that had been neglected in the past to overcome this racist history (Panikkar & Barett, 2021; Panikkar et al., 2023; Selle, 2020). Despite this work on the reasons for a lack of policy action to help EJ communities like VT migrant farmworkers, no research has evaluated the impact of the newly enacted EJ law, Act 154. This study aims to help fill that gap.

State EJ and Migrant Farmworker Literature in States Beyond Pennsylvania:

My preliminary comparative analysis of state level policy looks at states other than Pennsylvania (PA). There is literature in states beyond Pennsylvania with similar statements to VT EJ research that many policymakers do not have a good grasp on migrant farmworker issues and so they do not include enough representation for this community in policy spaces (Flores-Landeros et al., 2022; Méndez 2022). The San Joaquin Valley, California study mirrors this sentiment and found policymakers from this region did not know the environmental issues that plagued their migrant communities, so researchers wished to make them more aware of these issues. They found that policymakers lack an awareness surrounding political underrepresentation, food inaccessibility, worsening air quality and flood problems, climate change anxieties, unhealthy water quality, and few employment opportunities outside of the agricultural industry (Flores-Landeros et al., 2022).

A North Carolina study similarly from urine samples they had collected detailing that heavy metals contaminations was disproportionately affecting migrant farmworkers. This long-

hidden complication was found to be contributing to negative neurological development and reproductive problems for children and adults (Quandt, et al., 2010). This North Carolina and San Joaquin study demonstrates that while there is research that finds overlooked environmental problems and a lack of policymaker engagement, there is less of a focus on solutions and how to better engage official political actors.

While most of the research focused on the current and past environmental troubles facing migrant farmworkers, there was one study from California that focused on a solution. This study analyzed discussed a contract between the United Farm Workers (UFW) and Swanton Berry Farm in California. The collaborative contract created the first unionized organic farm that worked to improve the sustainability and working conditions for the primarily migrant farmworker staff (Bernstein, 2021). This UFW and Swanton Berry farm solution has parallels to working with a migrant farmworker organization in Vermont like Migrant Justice to increase migrant farmworkers EJ solutions in Vermont through collaboration under Act 154.

METHDOLOGY:

Reviewing Migrant Farmworker Expert Material and Previous Research:

As noted in the literature review, this was one of the primary methods to find the answer to environmental justice challenges that are facing VT migrant farmworkers. Beyond this previous research, I reviewed Migrant Justice and Milk with Dignity Standards Council reports about migrant farmworker conditions to synthesize the overlap between poor working/housing conditions that overlap with public health concerns in environmental justice challenges. I qualitatively analyzed these migrant work and housing condition reports through detailed notetaking.

Interviewing Migrant Farmworker stakeholders to Understand VT Migrant Farmworker EJ Challenges:

To answer my first question on environmental challenges facing migrant farmworkers, I primarily conducted IRB approved semi-structured interviews with Vermont migrant farmworker stakeholders and activists at local groups such as: Migrant Justice, Milk with Dignity Standards Council and their allies with migrant farmworker and EJ knowledge. Migrant Justice (*Justicia Migrante*) is a Vermont migrant rights organization that helps to advocate for economic and workers' rights (Migrant Justice, n.d.). Milk with Dignity Standards Council is a program that works with farms who enroll, currently equating to about 20% of Vermont's dairy production, in this commitment dedicated to improving the working lives of migrant farmworkers (Milk with Dignity Standards Council et. al., 2024). Companies like Ben and Jerry's are committed to only working with dairy farms involved in the program that are committed to this goal (Milk with Dignity Standards Council et. al., 2024). I had originally planned to contact migrant farmworkers themselves to understand these EJ climate change impacts better, but due to my strict timeline, I was unable to contact them directly. So, I also used these expert interviews to explore how migrant farmworkers are being affected by climate change impacts like heat exhaustion, flooding, or other climate disaster weather patterns in Vermont.

To conduct the stakeholder semi-structured interviews, I gained IRB approval to be able to reach out via emailing or telephone messaging devices, depending on if I had already established contact with this person prior to starting the interview process. I sent out an email that detailed the research and that the interview would be conducted in a conversational manner looking to answer my first overarching question of this study. Through the preferred form of

communication of over a phone call or a Microsoft Teams call, the semi-structured interviews were audio recorded to help supplement the notes taken. The interviews were conducted to take no longer than 20 minutes to be respectful of each person's time, but many individuals went over the time limit, going into immense detail about their expertise while working with migrant farmworkers. The recordings were deleted within two weeks of the interview being conducted and they were all listened back to in their entirety to ensure that notes were detailed and complete. See the semi-structured interview question guides in Appendix 1 to see what was asked to Vermont migrant farmworker stakeholders.

Reviewing Legislative Material and AC and IAC Committee Meetings to Investigate How Migrant Farmworkers have been Included in Act 154:

To gain the whole perspective of how VT migrant farmworkers are included and were intended to be included in Act 154 for my question, I read and took detailed notes of the legislative record on the Vermont General Assembly website and the EJ Advisory Council (AC) and Interagency EJ Committee (IAC) implementation publicly recorded meetings. These sources had plenty of material in the forms of letters, witness records, presentations, video recordings, meeting minutes and agendas that I reviewed in-depth to see when and where VT migrant farmworkers were mentioned.

I analyzed the legislative record of S. 148, Act 154 as it was a bill, for the Senate Committee on Natural Resources and Energy and the House Committee on Natural Resources, Fish, and Wildlife. I read all the public comments and witness documents in full for both committees to glean when VT migrant farmworkers were mentioned (House Committee on Natural Resources, Fish, and Wildlife, 2022; Senate Committee on Natural Resources and Energy, 2022). Since there was little direct mention of this population, I noted when they were

mentioned directly or indirectly to better understand how and when VT migrant farmworkers were incorporated into Act 154. This process allowed me to understand the intent of inclusion as the bill was originally drafted before it became passed as law.

The AC and IAC public meetings gave a clear record of the implementation work that has occurred and where VT migrant farmworkers had been mentioned as being represented and worked with on these two committees (ANR, 2025). I took detailed notes by reviewing all documents of each of these meetings and watching the recordings in entirety (ANR, 2025). In the instance that there was not a meeting recording provided, I took detailed notes of the meeting minutes, agenda, and related documents for that monthly meeting (ANR, 2025).

Interviewing Policymakers and Actors about how VT Migrant Farmworkers are Included in Act 154:

To continue to answer my question about how Vermont has tried to help migrant farmworkers, I interviewed four migrant advocates and stakeholders as well as six Vermont policymakers to look in depth at the role of migrant farmworkers and their issues in the development and implementation of Vermont's landmark EJ law Act 154.

My interviews with those affiliated with Migrant Justice, Milk with Dignity Standards Council, and related groups also included questions about how migrant farmworkers were included in the Act 154 process, and how migrant farmworkers could be better represented in the implementation process of the law. These individuals gave insight as to why migrant farmworkers and their groups have not been involved in the Act 154 process. I learned if migrant farmworkers and/or these migrant rights groups would be interested in being included as a representative on the AC or would want to work closer to the AC in another capacity . There

were also conversations regarding if the EJ challenges of VT migrant farmworkers were being looked at under the Act 154 process or not and what more needs to be done to address these concerns.

I gained IRB approval for policymakers in the same way as the migrant farmworker stakeholders. I reached out to Vermont policymakers for semi-structured interviews for more information on the current inclusion of migrant farmworkers in Act 154, as well as to understand the functions, structure, and story of the statute in greater detail. Vermont policymakers included those who were associated with the passing of the bill and those involved in its implementation process, specifically individuals on the Environmental Justice Advisory Council (AC) and the Interagency Environmental Justice Committee (IAC) which were working groups created by Act 154 to give recommendations to the state agencies on how to implement the deliverables listed (Act 154, 2022). I conducted the Vermont policymakers' interviews in the same manner as the Vermont migrant farmworker stakeholders. The only difference is that there were a different set of questions that I used to facilitate the conversation. See the semi-structured interview question guide in Appendix 2 to see what was asked to Vermont policymakers.

State Comparative Material Research Collection:

To answer my question about what other states have done in terms of EJ policy and migrant farmworkers, I looked at PA's EJ Policy's governmental reports, documents, and policy to see how VT migrant farmworkers are integrated into their EJ processes. I also looked at the EJ Policy websites that explained the various programs and advisory boards associated with the EJ Policy. These government reports and policy documents were read intensively with notetaking analysis applied to Act 154's own law, which was then able to facilitate state comparison in the last section of this research.

RESULTS:

This research revealed the extensive amount of environmental justice challenges that VT migrant farmworkers are facing. It also documents the strengths and weaknesses of including these farmworkers into the state's new environmental justice law, Act 154. The final state comparative analysis with Pennsylvania gives a useful model for improving Vermont's approach addressing these challenges and how to better improve Act 154 for the increased representation of VT migrant farmworkers. Here I will review each of these results surrounding my three questions, starting with the environmental challenges facing this EJ community.

Question 1: What are the environmental challenges that Vermont migrant farmworkers are facing?

Vermont migrant farmworkers are facing multiple environmental challenges. Through previous literature substantiated by interviews, VT migrant farmworkers face a lack of food accessibility, transportation, and personal protection equipment (PPE) and safety training, as well as professional agricultural public health risks, personal public health risks, and climate change risks. Many of these environmental challenges remain an issue that must be solved, which Act 154 could address. Some of these environmental issues have been improved by Migrant Justice and the Milk with Dignity Standards Council program, but increased research on climate change risks and water quality measurements that migrant farmworkers are facing is needed.

Food Accessibility:

Food inaccessibility has been researched in depth as an environmental challenge for Vermont migrant farmworkers (Mares, 2019). Due to a fear of deportation, a lack of ethnic food providers, and language access barriers, many migrant farmworkers have struggled to have a

steady supply of food (Mares et. al. 2017; Mares, 2019; Bennett et. al., 2021). Migrant farmworkers are also unable to access some public food assistance programs (FAPs) like Supplemental Nutrition Assistance Program (SNAP or food stamps), but migrant women can access Special Supplemental Nutrition Program for Women, Infants and Children (WIC) (Mares 2019, Ren et. al., 2023). Huertas, a food sovereignty program coordinated by the University of Vermont Extension's Bridges to Health (BTH) co-directed by Naomi Wolcott-MacCausland and Teresa Mares has helped to solve some of these food justice issues by working with VT migrant farmworkers to grow their own gardens filled with culturally relevant produce (Mares, et.al., 2017; Mares, 2019). While this helps to give farmworkers the means to grow their own food, more can be done to ensure that food is easily accessible, especially since many migrant farmworkers are not able to easily access grocery stores due to a lack of reliable transportation (Mares, 2019; Panikkar et. al., 2023a).

Transportation:

Migrant agricultural workers live in rural areas that exacerbate the trapped feeling of being and living on farms without public transportation or a personal vehicle. Transportation justice has been looked at regarding BIPOC and low-income groups in general, with VT environmental justice studies finding that many do not feel included in just transportation policies at the procedural level and wish to have more representation in these decision-making spaces (Panikkar et. al., 2023). VT migrant farmworkers are closely intimately linked with this issue since many do not own their own vehicles (Mares, 2019). They often rely on others, like volunteers or other VT migrant farmworker community members who own a personal vehicle, to give them rides beyond the farm, but this can be a difficulty to access when first moving to Vermont (Mares, 2019; Panikkar et. al., 2023a). VT migrant farmworkers are also not in a

location with accessible public transportation due to the rural nature of most farms, causing exacerbated difficulty in accessing health care or grocery and the farm owners are often reluctant to provide them with farm vehicles to borrow (Panikkar et. al., 2023a; Bryne et. al., 2021). Thus, many feel as if they are trapped on the farms since they have difficulty living without a personal vehicle (Bennett, et. al., 2021).

Professional Agricultural Public Health Risks:

The public health issues on the job for migrant farmworkers include a large degree of chemical exposures from pesticides, cow footbaths, manure gas, potential PFAS exposure and possible past exposure to neonicotinoids. The Rural Environmental Justice Informed by Community Expertise (REJOICE) Coalition has the first comprehensive environmental justice survey of migrant farmworkers, which had been conducted with other environmental justice communities to gain knowledge of what issues were most pressing in their lives through community engagement methods (REJOICE Coalition & VT Environmental Justice Network, 2020). Migrant farmworkers were surveyed through a Migrant Justice (*Justicia Migrante*) liaison (Bryne et. al., 2021). These surveys found that health was the greatest concern with 60% of migrant farmworkers discussing this concern (Bryne, et. al., 2021). From surveys and interviews also collected by the Vermont migrant rights organization, as outlined in the literature review that were analyzed by Panikkar and Barnett from Migrant Justice (*Justicia Migrante*), these documents and reports found high levels of exposure to iodine, chlorine, acid, and formaldehyde (Panikkar & Barnett, 2021).

Formaldehyde was discussed in migrant farmworker expert interviews. They discussed that formaldehyde is one of the main chemicals that migrant dairy workers are exposed to in formalin footbaths for cows. Formalin is a formaldehyde solution mixed with water and methyl

alcohol (NOISH, 2019). When exposed to formalin, especially on a regular basis as migrant dairy farmworkers are, migrant farmworker stakeholders discussed that the formalin mixture can enter the body through the eyes, lungs, or the skin without proper Personal Protection Equipment (PPE). The stakeholders outlined that migrant farmworkers are then often exposed to a large amount of health issues including irritated eyes, lacrimation (tear production), coughing, wheezing, dermatitis, and a higher risk for nasal cancer since formalin is a potential carcinogen (NOISH, 2019). In the interviews, migrant farmworkers were also known to have vision problems, which goes with the irritated eyes (NOISH, 2019). In the interviews, it was discussed that formalin is used the most in footbaths by VT migrant farmworkers, but it is important to note that there are alternatives used such as copper sulfate and zinc sulfate, which can be less toxic compared to formalin (Bjurstrom, 2023).

Along with formalin cow footbaths, migrant farmworkers work with large amounts of insecticides. There has been research for Migrant Justice conducted on the pesticides themselves though. In a collaborative report with a Middlebury student, through doing interviews with migrant farmworkers, they found that insecticides are used as well to address the fly and insect issues mentioned by the manure breeding sites, which have increased due to climate change (Knight & Khan, 2015). The 2019 Health and Safety Survey report conducted by Migrant Justice analyzed in Panikkar and Barrett's (2021) study found that that 16% of migrant farmworkers had been exposed to insecticides, but they did not include specific health impacts of these insecticides. The interviewees discussed that migrant farmworkers exposed to insecticides had higher amounts of headaches, dizziness, eye irritation, and mouth irritation (Knight & Khan, 2015).

Herbicides like atrazine, glyphosate, and metolachlor were discussed by interviewees and Panikkar and Barnett (2021) discussed the potential risk of these chemicals in their study. Pesticides have significant health effects on migrant farmworkers like eye irritation or ear damage, endocrine/metabolic effects, skin irritation, gastrointestinal issues, respiratory system damage, and central nervous system effects (Knight, 2014). During interviews, it was shared that in the past there had been a few cases where migrant farmworkers work with neonicotinoid seeds in the corn fields used to feed cows. “Neonicotinoids are insecticides that target insect nicotinic acetylcholine receptors (nAChRs), exhibiting high selective toxicity to insects over vertebrates and good systemic activity in crop plants” (Ihara & Matsuda, 2018). Little research has been done on the long-lasting effects of neonicotinoids on humans, but it is known that those who are occupationally exposed tend to see higher potential health effect risks (Zhang & Lu, 2022). However, since *Act 182: An act relating to banning the use of neonicotinoid pesticides* has passed in Vermont, neonicotinoid pesticides should be banned (Act. No. 182, 2024). Thus, there should not be present exposure to neonicotinoids, but the past or lingering effects of neonicotinoids are unknown and could prove to be a health issue in the future.

As with the potential long-term effect of neonicotinoids, farmworker stakeholders talked about the potential of PFAS effects for migrant farmworkers. PFAS are per- and polyfluoroalkyl substances that slowly break down over time in the environment, often called forever chemicals (US EPA & OW, 2016). During interviews, it was noted that migrant farmworkers may fish in rivers like the Winooski River and Otter Creek where PFAS has bio-accumulated in the fish in these bodies of water. PFAS may also be in the drinking water sources used by migrant agricultural workers as well. More research needs to be done to understand if and how PFAS is affecting VT migrant farmworkers.

Exposure to manure is a cause for concern as well. Migrant farmworkers are exposed to large quantities of manure in milk parlors. Migrant Justice has taken reports of air quality in the past, but they are not accessible to the public and are for internal purposes only. The interviewees detailed that the air quality of milk parlors is dictated by the cow Particulate Matter (PM) which has higher levels of manure gas, increasing the exposure to ammonia, carbon dioxide, methane, and hydrogen sulfide (Fronczak, 2018). Ammonia can cause eye ulcerations and respiratory health issues (Fronczak, 2018). Carbon dioxide can displace oxygen causing shortness of breath and dizziness (Fronczak, 2018). During interviews, it was said that a lack of proper ventilation with methane often causes headaches for migrant farmworkers, especially when they lack an awareness that these gases are affecting their health due to the workers getting adjusted to the smell of the manure odor. There is also risk of asphyxiation and hydrogen sulfide can lead to pulmonary edema or fluid build-up in the lungs and can paralyze nose nerve cells, reducing the ability to smell (Fronczak, 2018).

Other common dangers on the job include being struck or crushed by cows, falling on slippery floors, broken bones, sprains, rashes, nosebleeds, and more (Milk with Dignity Standards Council et. al., 2024). In interviews with migrant farmworker stakeholders, they discussed that manure is often mixed with sawdust to make bedding for the milk parlors. It was revealed during interviews that sawdust then often gets into the ears of migrant farmworkers causing ear infections. Migrant farmworkers often go to doctors for help with health issues like ear infections, but they are often unable to receive and are unaware of workers' compensation. Most also lack health insurance, so many pay high out-of-pocket costs (Byrne, et. al., 2021). More Spanish-speaking clinics are also needed to help inform migrant farmworkers of their potential workers' compensation benefits and to allow for more language accessibility in the care

being received (Bryne, et. al., 2021). Proper safety training is required to improve many of these public health issues on the job and can help to make migrant farmworkers aware of workers' compensation.

Personal Protection Equipment (PPE) and Safety Training:

Many of the chemical exposure issues that lead to illness, infection, and injury can be improved through personal protection equipment (PPE) and safety training, but migrant farmworkers often do not receive adequate protection and training on the job. Stakeholders discussed many details about the lack of PPE and safety training in interviews. They emphasized that environmental health risks require proper training and gear, especially due to the long-term health deterioration of migrant farmworkers working in milk parlors. Currently, seasoned migrant farmworkers train new migrant farmworkers because there is a lack of health and safety training provided by stakeholders in Spanish. It was mentioned that migrant farmworkers who conduct the training are also not compensated extra for this teaching this expertise. Also, the eyewear protection, or goggles, provided by farms is usually made cheaply, so discomfort increases, leading to the reduction of goggle usage. This reduction of goggle use is made worse because migrant dairy workers lack the funds to pay for their own more high-quality goggles. As temperatures have become hotter due to climate change, respiratory masks are reported by the migrant farmworker stakeholders to be worn less due to the difficulty in breathing in enclosed spaces with increased heat.

Personal (at home) Public Health Risks:

Public health issues at home include poor housing infrastructure, higher rates of mold exposure, unsanitary water quality, exposure to skin disease from manure on clothing, and

increased exposure to insects as the heat has risen over time (Selle, 2020; Panikkar, et. al., 2023b). Interviews also outlined that manure exposure to the skin has caused eczema, rashes, breakouts, and other irritating skin diseases. Migrant farmworkers must be taught to have specific clothes for at home and for at work must be separated, even when washed, to ensure that the manure left on clothing does not contaminate all the clothing that they own. This transmission of manure onto all clothing items can then be brought into the migrant's homes, exposing others who they live with or families to manure's skin risks. General environmental justice concerns for families of migrant farmworkers also include children having less access to parks and having high amounts of asthma attacks (Bryne, et. al., 2021). There is also a feeling of unsafety in some neighborhoods for those who do not live on farms (Bryne, et. al., 2021).

During interviews, it was mentioned that some migrant farmworkers have moved to Vermont to find agricultural opportunities because their hometowns in México were environmentally destroyed due to oil pipeline infrastructure. Specifically in the state of Tabasco, an oil company had bought many of the farmworkers' land and the oil pipelines had caused water and land contamination. Growing produce was the livelihood for these migrant agricultural workers, but due to this contamination they could not sell this produce anymore, so they ended up migrating to find more agricultural work in the US and Vermont. There are also stories of fires and floods forcing movement of migrant farmworkers, which means that VT migrant farmworkers are hoping to not have to encounter environmental issues in the U.S. as to not exacerbate their concerns or worries.

While many may have escaped the environmental contamination of their hometowns in México, water quality is still a personal issue that many Vermont migrant farmworkers are concerned with. During the interviews, it was shared that migrant farmworkers are concerned

with the flooding into the Winooski River and Lake Champlain because of the sediment and nutrient loading into these bodies of water. There is also concern over the water quality associated with the well water used in migrant farmworkers' homes since the water quality is often poor due to the pesticide and chemicals associated with the milk parlors runoff. From anecdotes told to stakeholders by migrant dairy workers, the water has often not been potable, or farmworkers are scared to drink it due to their proximity to the farms, so many buy bottled water in large quantities to ensure that the drinking water is safe. Even when the water has been boiled in kettles, the kettles over time have darkened in color. Showers are also known to have an odor as the water flows from the pipes. This water degradation is coming from the toxins from the pesticides and other farm chemicals that are polluting the well water of these farms that the migrant farmworkers live on.

One of the personal, at home successes is that many migrant farmworkers have worked on building Zero Energy Modular (ZEM) housing, which produces as much energy as it uses, through support from the Milk with Dignity Standards Council Standards Council (MDSC), Migrant Justice, Vermont Low Income Trust for Electricity, Efficiency Vermont, and The Working Lands Enterprise Initiative (Milk with Dignity Standards Council et. al., 2024). These new worker houses helped to ensure that they were pest and vermin free and in better condition structurally, which was a concern and difficulty in the past for migrant farmworkers (Milk with Dignity Standards Council et. al., 2024). Migrant farmworkers who work on farms outside of the Milk with Dignity Standards Council program are still exposed to high rates of mold, pest, and vermin in their houses.

Climate Change Risks:

Climate change effects were a category of environmental justice issues that were not looked at in detail. Rising temperatures are attributed to climate change, which has caused difficulties in working in the milk parlor due to increased heat and a potential increased risk due to flooding from climate disasters. In past research, it was found that extreme heat is a concern of migrant farmworkers, there was interest in seeing if the extreme heat in working conditions had gotten worse (Panikkar & Barnett, 2021; REJOICE Coalition and VT Environmental Justice Network, 2020). The two summers of flooding in Vermont in July 2023 and July 2024 also had devastated Vermont by destroying homes, polluting rivers and other bodies of water with high sediment runoff, and flooding farms, roads, and fields (Banacos, 2023; Staff, 2024). Yet, the flooding and its effects on migrant farmworkers were not reported out after the storms had damaged much of Vermont, leaving this gap in research that has yet to be explored.

Stakeholders reported that migrant farmworkers were not as impacted by these storms as other EJ communities like mobile home communities were in the state of Vermont. The farm structures are built on high land and are mostly located outside of the counties that were most devastated by the flooding. The fields of many farms, especially fields in lowlands, were affected. It is possible that migrant dairy workers were involved in major cleanup of these fields after the storms, but little is known about that possibility. It was outlined in interviews with migrant stakeholders that one of the future concerns is that if flooding were to affect migrant farmworkers in the future, migrant farmworkers do not have second homes or the resources to safely relocate like those with more wealth do in the state. There is also concern by stakeholders that the current emergency notification system in Vermont is not language accessible, so

translating these materials into Spanish would be helpful in case migrant farmworkers are impacted by future flooding.

Climate change has affected migrant farmworkers and the conditions they work with increasing temperatures. Increased heat causes higher amounts of bacteria in the manure, increasing Mastitis exposures for cows. Migrant farmworker stakeholders detailed that mastitis is when the udders of the cows become infected or clogged, leading to increased pus & blood causing the milk production of these cows to be spoiled. These cows then need to be milked separately, so migrant farmworkers need to learn when a cow is suffering from mastitis, if not then the infection can get into the milk tank and the production can be lost. Migrant farmworkers depend on the production of milk for their economic wellbeing, so this risk of milk production spoiling increasing is an important concern linked to climate change.

With climate change-related temperature increases, there is also heightened exposure to flies, larvae, and other vectors of disease, especially when the manure is a hub for fly breeding and disease propagation, as noticed by stakeholders in interviews (Penakalapati et. al., 2017). Stakeholders have seen migrant farmworkers using sticky strips in their homes and workplaces to catch the flies and other various insects. These sticky strips often lead to decomposing insects being left close to migrants, which could increase illness exposure overall.

As temperatures rise due to climate change, heat exhaustion with migrant farmworkers may also rise. With the cows' warm bodies, the milk parlors will rise to extreme heat temperatures in the summer. Vermont has not yet felt such high temperatures as other places in the United States, but the rise of summer warmth will increase and those health effects on heat exhaustion with migrant farmworkers are yet to be seen and studied.

Question 2: What has the state done to solve these EJ challenges for migrant farmworkers with the implementation of Act 154, the Environmental Justice (EJ) Law of Vermont, and why?

Vermont's efforts to address environmental justice challenges of migrant farmworkers are mostly composed of Act 154, the Environmental Justice (EJ) Law of Vermont in 2022. Act 154 provides the first legal definition of EJ. It also gives a concrete definition for what qualifies as an EJ community, known as an environmental justice focus population (EJFP), in Vermont. VT migrant farmworkers are included under this definition of an EJFP and can then meaningfully participate in the process of implementation with the EJ Advisory Council (AC) and the Interagency EJ Committee (IAC). These working implementation groups determine what qualifies as environmental benefits and environmental burdens under the law, with this determination coming from state agencies producing environmental benefit spending reports. The working groups also guide the creation of a VT EJ Mapping Tool. Each of the state agencies, with the recommendations of the AC and IAC, then must consider these environmental benefits and environmental burdens when working on projects and their associated funding. They must also create community engagement plans with EJFPs who help "evaluate new and existing activities and programs" (Act 154, 2022) and develop an EJ complaint process.

While there are many mechanisms in Act 154 with potential to include VT migrant farmworkers, they are currently not as engaged in the process due to a lack of direct migrant farmworker representation on the AC. This analysis will show that there are several important causes of this meaningful participation gap. These causes include that migrant supporting organizations like Migrant justice have not been included in EJ collaboration efforts since the testimonial process while the bill was being revised for passing. There is also no mention of

language access plans (LAP) as a requirement for state agencies. One of the largest causes is that the EJFP definition, and the subsequent VT mapping tool constructed off this definition, both over and under includes migrant farmworkers, reducing true collaboration but also increasing the chances of anonymity to be broken.

Efforts to Include VT Migrant Farmworkers in Act 154:

Ideas for a VT EJ Law, like Act 154, were first discussed in the legislature in 2007. S. 148 was introduced in 2021 by Senator Kesha Ram Hinsdale in the Senate Committee on Natural Resources and Energy, which would become Act 154 when passed in 2022 (Vermont Senate, 2021). Interviewees recounted that the push for its passage was accelerated when the U.S. Environmental Protection Agency had told the Vermont Agency of Natural Resources (ANR) in the period of 2017-2019 that they needed a VT EJ policy established in the state. ANR had thought to originally copy California's EJ law. However, the REJOICE (Rural Environmental Justice Opportunities Informed by Community Expertise) Coalition felt that a policy built on the understanding of VT EJ challenges would be better suited to its purposes.

When the bill was in the two Natural Resource committees of the Vermont Senate and the House of Representatives, there were many witness testimonies, presentations, and public comments given leading to debates about what should or should not be included in the bill (Senate Committee on Natural Resources and Energy, 2022; House Committee on Natural Resources, Fish, and Wildlife, 2022). Those involved in the passage of the bill described that REJOICE Coalition recommended that VT migrant farmworkers be a potential EJ community covered under the VT EJ Law while in committee. The REJOICE Coalition included their specific findings from the community engagement research that non-English speaking communities are even more at risk of environmental burdens exposure compared to other EJ

communities as evidence that a migrant group like farmworkers should be included (REJOICE Coalition & VT EJ Network, 2020).

In their testimony to these committees, REJOICE Coalition members specifically identified migrant farmworkers as an example of a group that should be acknowledged as an environmental justice community within Act 154 (Bryne & REJOICE Coalition, 2022). However, public comments and witness testimonies given by non-REJOICE Coalition members did not mention migrant farmworkers or immigrant communities, with a focus being on BIPOC and mobile home communities more generally (Senate Committee on Natural Resources and Energy, 2022; House Committee on Natural Resources, Fish, and Wildlife, 2022).

One of the biggest pieces of evidence of the REJOICE Coalition intention to include VT migrant farmworkers as an EJ group represented in Act 154 is the organizational letter presented during the witness testimony period. There were 33 Vermont environmental or social justice organizations pushing for the bill to become law in the letter that was presented to the House and Senate Natural Resources Committees (Mihaly, 2022). In this letter there were specific examples of EJ communities, like Spanish-speaking farmworkers and New Americans, that were used to show REJOICE Coalition EJ that could be remedied by the passage of the bill (Mihaly, 2022; Bryne, 2021). Their use as an EJ case study in the letter throughout the legislative process shows they were intended to be included.

However, despite their intention to include VT migrant farmworkers as an EJ community, the letter failed to include representative organizations like Migrant Justice. In the interviews, Migrant Justice noted that they did not sign the letter because the timeline to pass the statute was limited and they were not aware that such a support letter existed (Mihaly, 2022). Instead, larger Vermont environmental organizations were the main signers of this letter, and smaller

organizations did not have the ability to show their support through this letter signing. Migrant Justice was in support of the EJ bill passing though (Mihaly, 2022).

Despite the lack of written inclusion of VT migrant farmworker organizations, S. 148 passed and was signed by the Governor Phil Scott on May 31, 2022, becoming Act 154 (Act 154, 2022). So, while there appeared to be intent by other Act 154 EJ advocacy groups to include VT migrant farmworkers as an EJ community, there was a lack of follow through in including the supporting organizations of migrant farmworkers by Act 154 leading EJ advocacy groups, the writers of the bill, and other parties involved in the passage of the bill. These migrant rights advocacy groups were then unable to catch if VT migrant farmworkers were left out of Act 154 since they were not included in the statute's legislative testimonial and revision process.

Act 154 Contents and VT Migrant Farmworker Inclusivity:

Act 154, or the Vermont Environmental Justice Law, seeks to reduce environmental health disparities within the state of Vermont (Act 154, 2022). Before these health disparities can be worked on, the definition of who is considered an EJ community under the law must first be considered. Act 154 did pass with a preliminary definition of an Environmental Justice Focus Population (EJFP). This definition includes migrant farmworkers because they live in census block groups that have disproportionately high amounts of low-income, BIPOC, or non-English speaking households in Vermont (Act 154, 2022). The Environmental Justice Focus Population (EJFP) definition is in the process of being redefined to submit to the General Assembly (Act 154, 2022). The working groups are looking for more localized town data as opposed to census block group data before giving a more detailed definition from the current one outlined in Act 154 (*Joint Meeting with the Advisory Council and Interagency Committee (hybrid) 9/20/24, 2024*).

Act 154 also mandates that the state agencies, along with recommendations from the AC and IAC, conduct general concrete actions to work on EJ issues with EJFPs, known as deliverables. Here is an overview list of the deliverables covered:

- Environmental Benefits and Burdens Spending Reports with Subsequent Redistribution Efforts
- EJ Community Engagement Plans
- EJ Complaint Process Development
- VT EJ Mapping Tool Creation

The first deliverable is that state agencies must consider how their policies and programs have distributed environmental benefits and burdens to covered EJFPs (Act 154, 2022). The specifics of this requirement remain uncertain. The IAC has begun establishing specific guidance for the agency's environmental benefit spending reports, but more work still needs to be done. The AC has provided an overview of the specific inequitable distribution of benefits of each representative community, but migrant farmworkers were not mentioned (*Joint Meeting with the Advisory Council and Interagency Committee (virtual) 10/25/24, 2024*). So, the impact of this provision on VT migrant farmworkers is still unclear.

It is important to note, however, that this provision could help VT migrant farmworkers in several important ways. For example, it could require the Vermont Agency of Agriculture, Food, and Markets (VAAFMM) to reconsider the amount of money in pesticide prevention, integrated pest management programs or PPE investment that goes towards VT migrant farmworker pesticide reduction. It could also affect how much increased spending needs to occur

with climate change resiliency programs for VT migrant farmworkers in the Vermont Emergency Management (VEM) agency.

The covered agencies must also work on distributing these environmental burdens and benefits more equally through creating community engagement plans (Act 154, 2022). Community engagement plans could also be very helpful to VT migrant farmworkers because there has been limited outreach, as noted in interviews, to include, incorporate, and understand VT migrant farmworkers' EJ challenges and how state agencies can help reduce these EJ challenges. Interviewees felt that there was a lack of awareness about EJ challenges that VT migrant farmworkers are facing, and having direct representation of these groups can ensure that the EJ challenges listed in the previous section, such as a lack of transportation or other problems, are well known to all state agencies. The Agency of Natural Resources (ANR), the Environmental Justice Advisory Council (AC), and the Interagency Environmental Justice Committee (IAC) work with the covered agencies to evaluate these agency rules (Act 154, 2022). The IAC and AC, with the facilitation by ANR, could ensure an agency like VAAFMM directly includes VT migrant farmworkers into its community engagement plan.

The AC and IAC must guide the development of an EJ complaint process within the various state agencies. Like the community engagement plans, this process would allow for EJFPs to voice their concerns in a legal manner under Title VI of the Civil Rights Act of 1964 (Act 154, 2022; 42 U.S.C. § 2000d et seq., 1964). This would then link the EJ complaint to a discriminatory action that would need to be resolved with a high level of rigor, meaning that the complaint evaluations would happen based on the AC's recommendations (Act 154, 2022). So, Vermont migrant farmworkers could then submit complaints about issues like poor water quality

in the homes and their complaint would need to be taken seriously as a discriminatory factor under Title VI since poor home water quality disproportionately affects migrant farmworkers.

Finally, to continue to understand the disproportionate challenges that EJFPs like migrant farmworkers face, ANR must create a Vermont Environmental Justice Mapping Tool, with the help of the AC and IAC. The VT-specific EJ mapping tool has started development, but there is currently discussion and review of data to update the variables and percentages under the EJFP definition that is currently guiding the mapping tool as it includes about 92% of the state (*Joint Meeting with the Advisory Council and Interagency Committee (hybrid) 9/20/24, 2024*).

For the AC and IAC to implement recommendations for how to achieve these EJ Act 154 deliverables, ANR is the facilitator and fund distributor under Act 154 (Act 154, 2022). These funds also create three full-time positions, with one being a Civil Rights Compliance Director and the other two being assistant positions to the IAC and AC to help assist in the implementation of Act 154's concrete actions. These three Act 154 paid positions thus created the Civil Rights and Environmental Justice Unit in ANR (Act 154, 2022).

The IAC and the AC have worked on accomplishing the deliverables set forth by Act 154, although the due dates have been pushed back by two years after an appeal of the timeline to the VT General Assembly (Act 154, 2022; Vermont General Assembly, 2024; ANR, 2025). One of the largest accomplishments that occurred this past legislative session was the finalization and publishing of the Guide to Core Principles of Community Engagement (ANR et. al., 2024; *Joint Meeting with the Advisory Council and Interagency Committee (virtual) 10/25/24, 2024*). This guide has given general recommendations on how to conduct and write community engagement plans in state agencies, showing how the IAC and AC may be conduct their recommendation processes for each of the other Act 154 deliverables

The Vermont Agency of Agriculture, Food, and Markets (VAAFMM) is one of the key state agencies that will be receiving these recommendations and will be the direct state agency representative of VT migrant farmworkers. To create and complete the actual deliverables of Act 154 themselves, interviewees and the implementation meetings discussed that state agencies are creating internal EJ working groups to accomplish these Act 154 state agency goals. For example, there is an internal EJ working group in VAAFMM that represents each of the six divisions within this agency with two representatives per division. This group was formed to help implement the law more effectively and they are looking to create their own community engagement plans, track the environmental benefit and burden spending of the agency, and look at the EJ complaint reporting. These tasks will possibly be split between a financial team and a community engagement team so that the deliverables are tackled by individuals who have expertise and experience in one of these two categories of the law. The work that this EJ internal group does in the next coming months will impact migrant farmworkers the most.

Problems in Act 154 with VT Migrant Farmworker Inclusion:

While Act 154 has many existing opportunities for inclusion of VT migrant farmworkers in its processes, it is still missing key features that have not yet been addressed during the implementation process to improve the meaningful participation of VT migrant farmworkers. These issues include the potential exclusionary definition of an EJFP, the challenges in creating a mapping tool that does not expose VT migrant farmworkers, the lack of direct migrant farmworker representation in the AC, a lack of community engagement work with migrant farmworkers by AC representatives, little interaction or collaboration with migrant supporting organizations, small discussion or mention of VT migrant farmworkers in the IAC and VAAFMM internal working groups, and no language access plans (LAP) in Act 154.

*EJFP and the VT Mapping Tool Problems with Over and Under Including Migrant**Farmworkers:*

The EJFP definition uses census block data, which means that VT migrant farmworkers could be left out of the EJFP definition if they do not fit the current percentages needed to qualify within that geographic region (Act 154, 2022). The current definitions of EJFP are also too broad to know where EJ communities are in Vermont (Act 154, 2022; *Joint Meeting with the Advisory Council and Interagency Committee (hybrid) 9/20/24, 2024*). Thus, one of the other biggest problems emphasized by VT policymakers in interviews was about the EJ mapping tool (Act 154, 2022). They noted that there is a lack of data and awareness of the environmental challenges that the state has about where VT migrant farmworkers are located and that could be used as environmental variables for a future VT EJ map.

To solve these informational gaps, more funding, resources, and individuals with GIS abilities will be needed to help improve capacity and meet the new due date of January 1, 2027 (Vermont General Assembly, 2024). However, VT migrant farmworkers are at risk of deportation, especially with the current federal initiatives to deport undocumented residents, so interviewees expressed that there must be a balance between maintaining anonymity for VT agricultural workers and increasing understanding where they are in a way that does not put them at risk in the EJFP and EJ mapping tool creation. Also, interviews emphasized that migrant farmworkers' data needs to be used in a reciprocal, and not extractive, manner, which is another part of creating the EJ mapping tool that the AC, IAC, and ANR needs to be aware of.

A Lack of Representation of Migrant Farmworkers on the AC:

Beyond not only being left out of the EJFP definition and subsequently the mapping tool, migrant farmworkers also do not have a specific representative in Act 154 meetings, and therefore their issues do not get a lot of attention. (ANR, 2025). Instead, they have been represented broadly by the immigrant community representative (ANR, 2025). The food security organization representative is another indirect representative of the migrant farmworker community due to their work with Hunger Free Vermont (Act 154, 2022; ANR, 2025). Both representatives did not mention any specifics about migrant farmworkers (ANR, 2025). Immigrant communities are mentioned by these positions during AC conversations about who is or should be represented. However, these immigrant communities are not as discussed in detail as mobile home communities, low-income farmers, or BIPOC groups more generally (ANR, 2025).

The Natural Resources Conservation Council Representative on the AC has an indirect connection to migrant farmworkers as well. Natural Resource Conservation Districts (NRCs) are local districts of government that are based on the watersheds in 50 states plus territories in the United States that represent all individuals, including migrant farmworkers, living under the watershed created by the Vermont Soil Conservation Act (1939) (10 V.S.A. § 703, 1939). The White River Natural Resource Conservation District (WR NRC) is the current NRC that has the most direct representation in the state since their director is in that representative position for all VT NRCs (ANR, 2025). Yet, there are not many VT migrant farmworkers in the WR NRC. The yearly community engagement that other NRCs could provide representation to migrant farmworkers on the AC, but as mentioned in interviews, it would help to get in contact with organizations like Migrant Justice to improve community engagement overall.

It was expressed during interviews that community engagement with migrant farmworkers has not yet occurred within the AC either, but there have been plans for the immigrant community representative to engage with all immigrant communities through Association of Africans Living in Vermont Inc. (AALV), which is connected to all Vermont New Americans. AALV is also able to help bridge the language barrier since many of these immigrant communities have limited English-proficiency, like migrant farmworkers (AALV, 2025). In this upcoming legislative session, there are plans for the immigrant community representative in the AC to understand the specific EJ issues that each immigrant community faces as intended under Act 154. Community engagement was also quite slow with migrant farmworkers and other immigrant communities due to the transition between the ANR EJ coordinators, which are the support staff for the IAC and AC. So if the EJ coordinators have limited capacity, then they have limited support to give AC members. Overall, during the interviews, it was learned that the AC has not reached out to Migrant Justice, Milk with Dignity Standards Council, or another organization that specifically works with migrant farmworkers.

Barriers to A Continued Lack of Collaboration with Migrant Supporting Organizations:

A potential for a lack of migrant supporting organizations on the AC could be due to low payment. The payment for the AC members is not quite sufficient and was a concern for the AC community representatives in the public recorded meetings and in the interviews. This low payment, which currently stands at \$50 per diem, is looking to get increased to \$250, with the meetings not allowed to exceed more than 8 times per Act 154 (*Joint Meeting with the Advisory Council and Interagency Committee, 11/22/23, 2023*). This amount given to AC representatives who are also EJ community members, with many being indirect representatives of VT migrant farmworkers, means that they are unable to commit themselves to this work fully since they need

to earn income to live through their full-time jobs. Some of the interviewees had mentioned that having a migrant farmworker specific position could be beneficial in having a direct link to this community, while still maintaining a more broader immigrant community representative to help with their large workload. Yet, the lack of compensation and capacity related to other EJ projects led organizations like Migrant Justice to say that they are unable to fulfill the position because they have limited capacity and resources to dedicate to this comprehensive position.

Similarly, the implementation process of the deliverables has been discussed as being too technical and on a governmental timeline, which does not foster a welcoming environment to bring in migrant farmworkers or supporting organizations, nor is it in line with the original intent of the bill to address EJ issues brought up by the AC members after working with EJ communities (ANR, 2025). The notion of needing to “move at the speed of trust,” was used in all the implementation meetings and in some of the interviews (ANR, 2025). However, in the interviews it was revealed that trust and confidence had not yet been built throughout this over two-year process that began in 2023. Instead, there was still an inability to trust the agencies from the AC members, especially with the use of the Consensus Building Institute designated by the EPA and ANR, which had been seen to have attacked EJ communities in the past with their facilitation style. Some of the AC members have felt that they have not been heard or are able to make a tangible, practical impact outside of the deliverables listed in Act 154, which was not the original intent of the law because it was meant to include EJ community input into state level activity, which it has not yet done with VT migrant agricultural workers. This lack of trust has led to a decrease in participation of AC members in the implementation meetings as well, which has been evident during the publicly recorded meetings (ANR, 2025). If VT migrant farmworkers were to have a representative on the AC, then there would need to be an

understanding of trust established, especially when migrant workers' rights, which have much overlap with environmental issues, have not been addressed yet.

To help increase this trust, the law is going back to committee for revisions in the Senate Natural Resources Committee to make it more accessible and less technical so that it is understandable to all EJ communities. If the current language of the law has trouble including and being accessible to all EJ communities, especially since it has not been translated into non-English languages like Spanish, then migrant farmworkers and the organizations that support them will also struggle to be included in a process that is not currently accessible and fully integrative to meet their EJ needs.

No Language Access Plan (LAP) Requirement under Act 154:

While Act 154 requires many concrete actions that affect VT migrant farmworkers, it does not require language access plans (LAPs) to be created in all state agencies (Act 154, 2022). LAPs are vital and federally required under EO 13166 and Title VI of the Civil Rights Act of 1964, ensuring that all governmental programs are understood by those who have limited English proficiency (LEP) (Clinton, 2000; Title VI of the Civil Rights Act of 1964, 1964). Those who fall under the LEP definition, which includes VT migrant farmworkers, are currently to be included in Act 154 (Act 154, 2022). There has been a start, as mentioned in interviews, that the Vermont Emergency Management (VEM) state department's VT Alert system is being adapted to make language more accessible. Under Act 143, an act relating to natural disaster government response, recovery, and resiliency, it has required that emergency service for an all-hazards event provide language assistance services for limited English language proficiency individuals (Act 143, 2024). Thus, VEM is in the early stages of providing assessments and working to improve these services. However, this is not required by all state agencies under Act 154, especially when

the public meetings are not translated for all to understand even though limited English proficient groups make up one third of the current EJFP definition under Act 154 (Act 154, 2022; ANR, 2025).

There is also lots of discussion about ensuring that all the information is disseminated to EJ communities through translation with accessible language (ANR, 2025). While VT migrant farmworkers are not explicitly stated, they do require language access in languages like Spanish, but there is not a specific translation of Act 154 implementation meetings or materials into other languages. The Civil Rights and Environmental Justice Unit, which are the drivers of the AC and IAC meetings, have a hyperlink to help provide free language assistance services on their website, but not on the VT Environmental Justice Law website (ANR & Civil Rights & Environmental Justice Unit, 2025; ANR, 2025). There are AC voices that have been concerned, as expressed during the interviews, that working with VT migrant farmworkers, especially a community that is so vulnerable to environmental challenges, must be done in a way that is not burdensome. There must be safeguards put in place to ensure that the work does not become another hardship for VT migrant farmworkers. However, the AC also mentions that there are EJ communities that are not being represented thoroughly during these meetings, but there has not been much further discussion beyond this recognition and no mention that VT migrant farmworkers are a group that could require more direct representation (ANR, 2025).

A Lack of Migrant Farmworker Discussion in the IAC and VAAFMs:

The Interagency EJ Committee (IAC) rarely mentions any EJ community by name as well in the meetings, so VT migrant farmworkers are not discussed. Vermont Agency of Agriculture, Food, and Markets (VAAFMs) is represented, but they had not mentioned migrant farmworkers directly either in the meetings (ANR, 2025). Representative Abbey Willard, who is

the Director of Agriculture Development Division within VAAFMM, has given these updates to the IAC. In the beginning of the committee meetings in 2023, she mentioned that she had not felt enough support from the agency to work on EJ implementation within VAAFMM (ANR, 2025). She also discussed that there has been a lack of community engagement conducted by VAAFMM and that more needs to be done to look at the data being collected (ANR, 2025). The most recent update she gave in these meetings is that the agency has recently created an internal EJ Agriculture Committee (*Joint Meeting with the Advisory Council and Interagency Committee (virtual) 10/25/24, 2024*). She has been working hard on communicating with the agency to keep on track with the timeline and to develop a consistent meeting schedule with the internal committee and VAAFMM leadership. She discusses capacity concerns within the agency as well, especially since the internal committee is still learning about the requirements for the state agencies under Act 154.

VAAFMM has been tackling community engagement in the past with farmers through listening session series that were open-ended and allowed farmers and farmworkers to express their concerns, appreciations, and other comments about the agency of agriculture (VAAFMM, 2025). The interviews I conducted said that migrant farmworkers were possibly in attendance, but the report did not specify if they were (VAAFMM, 2025). These listening sessions were not done alongside organizations like Migrant Justice or Milk with Dignity Standards Council, but they worked with other local organizations to get in contact with other local farmworkers. There was also no translation services provided. It was even mentioned in the listening session report that a farmer from Orleans County is in partnership with migrant farmworker organizations like Migrant Justice and Milk with Dignity Standards Council for their farm (VAAFMM, 2025). So,

this Orleans County farmer believes that these organizations should be connected more directly with VAAFMM as well and not just the farm owners (VAAFMM, 2025).

The Farm First and Farm & Ranch Stress Assistance Network (FARSAN) programs provided by VAAFMM work on mental health support. They help provide support to the Open Door Clinic and Bridges to Health who work directly with migrant farmworkers. The stress that migrant farmworkers feel is very high, so these programs have helped to address that. However, since federal funding has been reduced for FARSAN since the fall, there will need to be increased resources to ensure that migrant farmworkers still have adequate mental health support. VAAFMM has done work supporting VT migrant farmworkers in mental health support, but there has not been much focus on the rest of their EJ challenges related to Act 154, especially since VAAFMM has not considered VT migrant farmworkers as an EJ community they need to look at yet. This gap needs to be addressed when looking at the concrete actions required under Act 154 with the community engagement plans, environmental benefit and burdens spending report, and EJ complaint process development within the VAAFMM as mirrored by IAC and AC recommendations. Until migrant farmworkers are concretely defined as an EJFP, then no work can be done to include them in the meaningful participation required for these concrete actions by Act 154.

Question 3. How have migrant farmworkers been included under EJ policy in Pennsylvania compared to Vermont?

To help understand potential solutions to the problems listed in Act 154 for including VT migrant farmworkers, I completed a make a state comparison. A state comparison gives insights into how some of these problems have been solved by others who have worked on these issues

for longer, especially since VT is new to having an EJ law. So, I investigated what Pennsylvania has done regarding solving EJ issues with an EJ Policy for their migrant farmworker population.

Pennsylvania (PA) and Vermont (VT) are both major producers and net exporters of dairy in the United States (VAAF, 2024). PA and VT are both states in the Northeast region, so they have somewhat similar environments, weather, and climate patterns. They also both rely on a significant number of their migrant workforce in their respective dairy industries (DeJesus, 2024; Milk with Dignity Standards Council Standards Council, 2024). I am from Pennsylvania so I have connections to this state and understand its political climate relatively well in comparison to Vermont. I looked at the EJ Policy and inclusion to PA migrant farmworkers in a preliminary comparison to Act 154 and its inclusion of VT migrant farmworkers. The Pennsylvania Department of Environmental Protection (DEP), which is the equivalent of the Vermont Agency of Natural Resources (ANR), has been engaged in environmental justice work since 1999 and has had its Environmental Justice Policy (previously known as the Environmental Justice Public Participation Policy) since 2001 (DEP & OEJ, 2023b). Its policy then has ideas that Vermont can take with language access plans, community engagement, and developing a comprehensive EJ mapping tool.

Pennsylvania's Environmental Justice Policy:

Pennsylvania's Environmental Justice Policy has similar general guidelines for environmental justice processes within the DEP that do not directly reference migrant dairy workers like VT's Act 154. Both have an environmental justice community built from census block group data. For Pennsylvania, what is known as an Environmental Justice Area (EJ Area) instead of an EJFP, is that the area must score an 80 or higher on the PennEnviroScreen mapping tool to be considered an EJ Area. This area then must be included in the meaningful participation

of the permitting or project process through what is known as trigger permits, which are ‘triggered’ when a governmental project or permit will be done in an EJ Area (DEP & OEJ, 2023b). The PennEnviroScreen includes several variables to calculate this score, and like Vermont, low-income and POC percentage tend to be strong indicators of what is considered an EJ Area. This census block group definition is like Vermont in that they both include certain areas under their definition of what is an EJ community that can meaningfully participate in environmental decision-making for Vermont, or permitting for Pennsylvania, processes. This geographic definition however means that both Pennsylvania and Vermont may be missing migrant farmworkers under this definition if they live in an area that does not meet the EJ focus population or area requirements. There also may be a lack of data in determining these census block guiding EJ definitions, as stated in the methodology of the PennEnviroScreen development, where variables like linguistic isolation or pesticide exposure need higher resolution data (DEP & OEJ, 2023a). Opt-in projects are also allowed if the community members or DEP request that certain permits become trigger permits, which helps to ensure that a group that is not included in the census block definition, like a migrant dairy farm not in an EJ area for example, is included in the participation of the permit process (DEP & OEJ, 2023b)

Community Engagement Comparison:

The community engagement piece of the Pennsylvania EJ Policy is detailed further within this guiding document for the PA DEP. The VT Core Principles of Community Engagement created by the IAC and the AC is a recommendations document that is a start to help the VT state agencies create their own community engagement plans (ANR, AC, & IAC, 2024). The PA EJ Policy has a community engagement plan for the DEP and the state agencies that it works with. While both are general and do not mention migrant farmworkers, the DEP

goes one step further and gives concrete actions that can be taken by the DEP and its partner state agencies to improve community outreach (DEP & OEJ, 2023b). The EJ Policy details the before, after, and during the incorporation of meaningful participation during the trigger or opt-in permitting process (DEP & OEJ, 2023b).

Act 154 does not have explicit steps yet for community engagement in its law, but it does have the recommendations document of the VT Core Principles of Engagement (ANR et. al., 2024). One of the parts that the DEP community outreach that could be added from Pennsylvania to the VT Core Principles of Community Engagement is that not only communities themselves, but Community-Based Organizations (CBOS), community liaisons, and stakeholders must also be included in this outreach (ANR et. al., 2024). This language would help to ensure that a community-based organization like Migrant Justice (MJ) would also be included when working with the community in Act 154, which would be helpful when they have a large amount of environmental challenges data and understand some of the EJ needs of the migrant farmworker community. It would also mean that stakeholders in Act 154, which could include individuals who have researched migrant farmworker environmental challenges, would need to be consulted with as well, especially if the permit process required increased expertise to understand the needs of an EJ community, or migrant farmworkers for the purpose of this research.

Language Access Plan (LAP) Comparison:

The largest inclusion of migrant farmworkers in the PA EJ Policy is that there is a direct requirement to have a language access plan (LAP). This language access plan (LAP) requirement is not a part of Act 154, but there is a section that says meaningful participation means including all languages into the decision-making processes (Act 154, 2022). However, having concrete

actions within the law could help to incorporate migrant dairy farmworkers who may not speak English.

The EJ PA Policy structures their LAP as a general requirement, but it is especially needed under the section entitled “Enhanced Public Participation” (DEP & OEJ, 2023b). A LAP is then required to be included in what is called a public participation strategy, which is like a community engagement plan but for a specific governmental project (DEP & OEJ, 2023b). So, if migrant farmworkers were to be contacted under either a trigger or opt-in project, then the DEP and the state agencies working on a project with Spanish-speaking migrant dairy workers would need to ensure that all the public meetings, notice & comment periods, and the access to the permit application materials were all translated appropriately (DEP & OEJ, 2023b). Also, if technical consulting or education is needed to help understand the processes and languages better, than the PA EJ Policy recommends that this consideration be given, especially to an EJ community like migrant farmworkers who do not understand English or may not be aware of the governmental processes of Pennsylvania since they are New Americans (DEP & OEJ, 2023b).

EJ State Mapping Tool Requirement Comparisons:

One of the biggest influences that the PA EJ Policy can help guide is the development of a comprehensive mapping tool known as the Pennsylvania Environmental Justice Mapping and Screening Tool (PennEnviroScreen) (DEP, 2025). Act 154 requires a similar GIS-based comprehensive mapping tool to be developed with the help and recommendations of the AC and IAC (Act 154, 2022). While there has been the development of a GIS VT tool called the Vermont Environmental Disparity Index by Bindu Panikkar and Qing Ren, which used census tract data to help determine that areas with higher levels of racial diversity and limited English proficient individuals are at a higher environmental risk looking at several indicators that had

parallels with PennEnviroScreen (DEP, 2025; Ren & Panikkar, 2021). Yet, the development of a comprehensive GIS EJ VT mapping tool like PennEnviroScreen by the IAC and AC under Act 154 has been preliminary due to a lack of data and a commitment of not wanting to endanger migrant dairy workers as stated during interviews.

The two main indicators included in PennEnviroScreen indicating where migrant dairy workers may be located are linguistic isolation and pesticides. The PA tool uses either census block or census tract depending on the data available, which gives them the ability to be more precise if they have the information to do so (DEP & OEJ, 2023a). The linguistic isolation variable is defined in PennEnviroScreen as “households where all members 14 years of age or above have at least some difficulties speaking English” (DEP & OEJ, 2023a). The VT Environmental Disparity Index uses a similar social vulnerability indicator which is mirrored in Act 154 with those who are Limited English Proficient (LEP) which is the “population age 5 and over who speak English less than ‘well’” (Ren & Panikkar, 2021). The major difference between the PennEnviroScreen and the VT Environmental Disparity Index is that the census block data is used for the PA mapping tool while census tract data is used for the VT mapping tool (DEP & OEJ, 2023a; Ren & Panikkar, 2021).

To gain the census block group level, which serves to include a smaller number of people in each of its areas compared to the census tract level, the PennEnviroScreen looks at the American Community Survey (DEP & OEJ, 2023a). The VT Environmental Disparity Index uses the Social Vulnerability Index by the VT Department of Health, which gains its data from the American Community Survey and U.S. Census Bureau as well (VDH, 2016). While this question would possibly require further research, it would be worth investigating if the VT comprehensive mapping tool could also include a mixture of census block and census tract data

to be more precise in its finding of where LEP populations or households are approximately located, without outing VT migrant farmworkers' exact locations.

The most useful indicator for farmworkers that PennEnviroScreen includes, but that the VT Environmental Disparity Index does not, is a pesticide exposure indicator for environmental pollution (DEP & OEJ, 2023a). In their methodology section for PennEnviroScreen, the DEP and OEJ include that pesticides are used to indicate where PA migrant farmworkers are located since they tend to be at a higher risk of exposure to pesticides than other groups (DEP & OEJ, 2023a). While they mention that the pesticide data is preliminary, and that higher resolution pesticide use data is needed since it is only derived from the United States Geological Survey (USGS) county-level data (DEP & OEJ, 2023a). This EJ correlative variable is one that can be included in a comprehensive VT mapping tool as it is getting developed with the IAC and AC per Act 154's mandates.

Lack of Inclusion of Farmworkers in PA Policy Design and Implementation:

Both Pennsylvania and Vermont are similar in that they lack direct inclusion of migrant dairy workers as a group in their respective representative bodies on the Environmental Justice Advisory Board (EJAB) and Environmental Justice Advisory Council (AC) (Act 154, 2022; EJAB, 2025). Both have had similar histories as well with a lack of migrant farmworker supporting organization inclusion, with the open-endedness of the EJ PA Policy allowing for representatives to be chosen based on the discretion of the Secretary of the DEP (DEP & OEJ, 2023b). Therefore, the lack of incorporation of migrant dairy workers' voices is an issue in both Pennsylvania and Vermont, which indicates that more direct representation of migrant farmworkers is needed in these two advisory bodies.

Recommendations to Incorporate VT Migrant Farmworkers into the Vermont Environmental Justice Law and its Implementation Process:

After this investigative analysis of Vermont's migrant farmworkers' environmental challenges, what Vermont has done under Act 154 and beyond to include migrant farmworkers, and the comparison of Pennsylvania's treatment of migrant farmworkers under their respective EJ policies. Below is a list of recommendations to better represent and include VT migrant farmworkers into the further implementation process of Act 154 and beyond:

1. Add a VT migrant farmworker representative on the Environmental Justice Advisory Council under Act 154. This representative could be a Migrant Justice organizer or a VT migrant farmworker member, but since they have limited capacity, it is important to find someone who has the time and ability to fill this low pay position. There could also be increased pay to help reduce the financial burdens of a migrant farmworker representative or other EJFP representatives indirectly connected to migrant farmworkers. Not overburdening the already overworked EJ group and supporting migrant rights organizations is critical to ensuring success in bringing them into this meaningful participatory, but time-consuming work.
2. Include a Language Access Plan (LAPs) requirement under Act 154. There are language access services provided more generally if requested under ANR and are being integrated into emergency management services more specifically. Yet, the environmental justice law, which covers limited English proficient (LEP) populations does not have a concrete LAP in its statute, leading to many of the documents and meetings for the AC and IAC being inaccessible. Since many VT migrant farmworkers are not proficient in English, providing translation without having to ask for it can ensure that they feel they can access

and contribute to this work being done under Act 154. This LAP could also include translating the law into languages like Spanish, which is spoken by VT migrant farmworkers, and publicly compiling these translated documents online for easy access.

3. Expand the Act 154 Environmental Justice Focus Population (EJFP) definition beyond the census block or geographic boundaries as more data is being collected. This is a difficult task to accomplish currently, but as more data is collected, ensuring that EJ populations, like migrant farmworkers, who live in census blocks where they might not be counted as an EJFP is important to ensure that they are still covered under the law. Potentially, including specific named EJ communities that must be an EJFP as well as the census block definition can ensure that migrant farmworkers are included.
4. Community engagement plans with VT migrant farmworkers should mirror the open dialogue conducted by VAAFMM with farmworkers in the past year. VT migrant farmworkers can be reached through supporting organizations like Migrant Justice, Huertas, the Open-Door Clinic, AALV, etc. There should be translation services provided so that both VT migrant farmworkers and English-only speakers can understand each other. These open dialogues should happen on a yearly basis and could also provide education on Act 154 about the protections and technicalities of Act 154, as demonstrated in Pennsylvania community engagement under their EJ Policy. Community engagement events can also be increased to bring policymakers and migrant farmworkers together in more informal settings to build trust in community engagement in Vermont. More funds would be welcome to increase facilitation of more community engagement.
5. A VT EJ Mapping Tool may not when defining if VT migrant farmworkers are included in Act 154. Yet, if it remains a main deliverable required by Act 154, then utilizing

variables like pesticide exposure is paramount to signify the VT migrant farmworker location without putting them at risk of exposure to lack of anonymity dangers. This technique is mirrored in Pennsylvania. PA uses pesticide variables to indicate where migrant farmworkers may be in a specific census block in the PennEnviroScreen, which helps to retain some anonymity. Limited English proficiency, as seen in the Vermont Environmental Disparity Index, accomplishes this similar indicator if it is kept at a relatively broad level, which could be a census block. More research is needed to determine the best indicators of geographic level for the VT EJ Mapping Tool that does not breach VT migrant farmworker anonymity.

6. Bring more awareness to the AC and IAC about VT migrant farmworker EJ challenges to better inform what needs to be addressed by state agencies in ensuring that the environmental benefits and burdens are distributed more equitably. AC representatives can facilitate these conversations if they have the time and capacity to do so and they can write reports that can be accessed by all state agencies that discuss migrant farmworker EJ challenges that need to be solved.
7. Build more trust between the AC and IAC, which can better integrate migrant farmworkers if they were to join the AC in a larger, more direct representative role. This could look like, as the PA EJ Policy suggests, having IAC and AC members attend various community events or host gatherings that bring EJ communities and those working on implementation under Act 154 to come together. Trust is built through not only formal processes, but informal discussions with cultural sharing.
8. Vermont Agency of Agriculture, Food, and Markets (VAAF) should reconsider the amount of money in pesticide prevention, integrated pest management programs or PPE

investment to help improve VT migrant farmworker pesticide reduction. This pesticide reduction spending should be reflected in the environmental spending migrant farmworker report that is required by Act 154. Other state agencies should also include VT migrant farmworker concerns in their environmental benefit spending reports, like with increased spending on climate resiliency programs focused on language translation services in the Vermont Emergency Management (VEM) agency.

9. Every VT state agency should consider how resources and programs are being allocated to help solve EJ challenges for migrant farmworkers. Similar to VAAFMM with the pesticide prevention example, every agency should also engage in the process of including VT migrant farmworker concerns in their environmental benefit and burden spending reports. So, while not every state agency may be as easily identifiable in their connections to migrant farmworkers, every state agency needs to look at how they currently work on EJ challenges with migrant farmworkers, which will again involve robust community engagement.

Conclusion:

The investigative analysis on Act 154 and VT migrant farmworker inclusion is significant because there has been very little work done on environmental justice policy solutions for migrant workers in Vermont. This research is also the first evaluation of Act 154 as a body of law and its impact on a specific EJ community. While past research had examined the environmental challenges of these farmworkers, specific Act 154 recommendations have not yet occurred until this research to push the conversation further through evaluating the processes of the law and where VT migrant farmworkers could be better included. While Pennsylvania had similar issues with their definitions and inclusion of VT migrant farmworkers on the EJ Policy's

advisory board as well, their language access plan, comprehensive PennEnviroScreen mapping tool, and community engagement strategies are ones that Vermont can implement into Act 154 and its implementation work. These recommendations should be heavily considered in future revisions of Act 154 and should be further amended as more information and collaboration occurs with VT migrant farmworkers and migrant rights organizations.

Another important new factor that has developed since this research was conducted is the more aggressive federal policy on immigration. The Trump administration has become a cause for concern for many migrant rights groups like Migrant Justice across both the United States and in Vermont. Anonymity protections will need to be most respected since these groups have become concerned with the increased rates of deportation nationwide. The federal funding cuts to environmental work in the EPA and in environmental justice offices nationally (Environmental & Energy Law Program, 2025). In addition, I conducted interviews prior to many 2025 federal funding cuts for environmental justice work, so while interviewees discussed concerns about federal budget cuts on Act 154 implementation, that actual impact remains to be seen. There may also be strategy to wait before further implementation in case Act 154 deliverable work gets targeted by the federal administration as means for Diversity, Equity, and Inclusion (DEI) slashing. Thus, more research can be done on the impacts of new federal policies on Vermont's environmental justice work and Act 154 potential delayed impacts.

Future research should also further investigate environmental challenges facing VT migrant farmworkers in more detail. Environmental challenges that could be investigated are surveying VT migrant farmworkers on their concerns about climate change and what mitigation or resiliency work can be done to ensure that their agricultural livelihoods are not upended if a major storm and flooding event were to impact Vermont. Qualitative interviewing to understand

the climate impact reasons in México for VT migrant farmworkers' move to Vermont could be beneficial in understanding their mental health challenges better and their worries about climate or environmental issues. The water quality issues that VT migrant farmworkers face deserves its own research so that the chemical properties and health issues of the unhealthy water can be properly investigated.

Act 154 requires more general research itself beyond looking only at VT migrant farmworker inclusion. Every EJ community is unique in their issues, so it is important that the law is evaluated more to ensure the inclusion of every EJ community, including VT migrant farmworkers. A more in-depth state comparison piece could improve Act 154 research as well. There could be multiple states involved in a large state comparison research project. This would allow for Act 154 to not only be compared with Pennsylvania, but other states that may have other solutions that could bolster migrant farmworker inclusion in the law. Research on the impacts of Act 143 and VT migrant farmworkers for language accessibility improvements during emergencies is also needed. In general, more conversation about VT migrant farmworkers is necessary to engage in across the state. This population has been left without a voice in political activity and engagement for quite a long time. Interest groups like Migrant Justice and programs like Milk with Dignity Standards Council have brought conversation about VT migrant farmworkers into the light. Environmental rights of all Vermont residents, including and especially VT migrant farmworkers, are necessary as environmental justice efforts become a part of the larger VT environmental conversation. Act 154 is a start towards environmental justice inclusion of VT migrant farmworkers, but continued work behind these procedures of this law needs to occur so that environmental distribution and representation is more equitable.

Appendix 1:

Semi-Structured Interview Guide for Vermont Migrant Farmworker stakeholders

Overarching question: What are the biggest environmental challenges that Vermont migrant farmworkers face?

1. What are some general environmental concerns that you have for migrant farmworkers?
2. Bindu Panikkar's study on migrant farmworkers published in 2021 outlines the environmental health and related working condition challenges from Migrant Justice studies from 2014 to 2019. These studies found that migrant farmworkers are exposed to toxicities like iodine, chlorine, formaldehyde, and acid as well as pesticide toxins infiltrating the water on the farms. There are also mentions of unsafe working conditions with long hours, lack of adequate housing, lack of access to health care, language barriers, and a lack of transportation to name a few. Are there studies from your organization conducted from 2020-2023 that garner different results?
 - a. Has environmental chemical toxicities decreased and working conditions improved for migrant farmworkers?

While this study outlines some of the environmental challenges that migrant farmworkers face, it does not look at problems like extreme weather events. So, these next couple of questions will look more specifically at these types of issues not covered in the study.

3. Is exhaustion or fatigue due to extreme heat a growing concern for migrant farmworkers?
 - a. Are migrant farmworkers concerned about future climate change effects on working and living conditions?
4. How were migrant farmworkers affected by the summer of 2023 storm or the recent storm this past summer?
 - a. If yes, how were they affected by the storm?
 - b. Did they receive aid or help after or during the storm?
 - i. If yes, what kind of aid or help?
 - ii. How was your organization involved in ensuring that migrant farmworkers received flooding relief aid without risking deportation?
5. Do you or the migrant farmworkers that you work with have worries about increased extreme weather events in the future?
6. Do you believe that migrant farmworkers will be protected from future climate disasters?
7. What solutions could help solve some of migrant farmworkers' biggest environmental challenges or worries?
8. Does your organization feel that there is currently representation for migrant farmworkers in this rules and regulation-making process? What changes would you make to increase representation for migrant farmworkers in this Act 154 rulemaking process?
 - a. Explain the rulemaking process regarding the Advisory Council and Interagency EJ Committee as needed.

Appendix 2:**Semi-Structured Interview Guide for Vermont Policymakers**

Overarching question: Why has the state done on this issue of EJ and migrant farmworkers as it relates to Act 154?

1. What has your role been in what the state has done related to Act 154 and EJ issues?
2. What are the top issues related to environmental justice (EJ) that the state is focusing on?
3. What are some general environmental concerns that you have for migrant farmworkers?
4. How have migrant farmworkers been represented and included in Vermont environmental justice policy process as it relates to Act 154 and its current implementation?
5. What changes, if any, would you make to increase representation for migrant farmworkers in this Act 154 rulemaking and implementation process?

Results:

Paragraph that says I am going to review the results of my research

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