

地方創生に資する FEC+M自給圏の創出に関する研究と実践

東京農工大学生物システム応用化楽譜 中山雅行
LLC小田原かなごてファーム

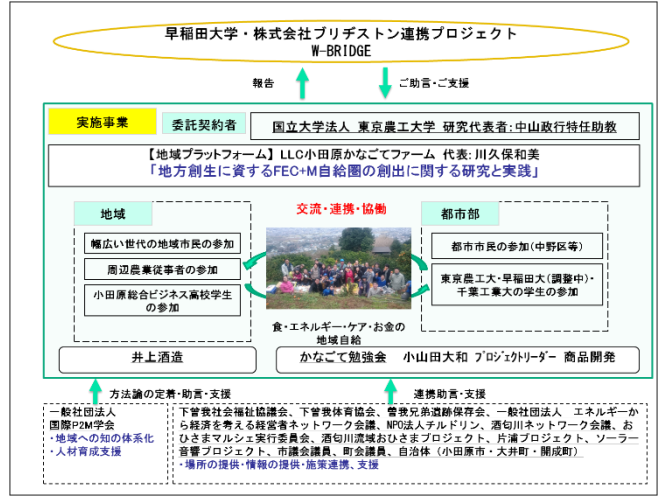
研究・活動の背景と目的

- 神奈川県小田原市を拠点に耕作放棄地の再生・保全をはじめとする地域課題の解決活動を市民主体で実施している。
- 誰かが危機感を持ち地域課題を解決しなければ、その負債は大きなものとなる。
- 現状では主体の負担が大きい。
- この状況が続くと持続性が担保できない。



地域社会、文化、経済というようにこれまで分断されて取り扱われてきたものを、すべての要素を一体化することで、「FEC(食・エネルギー・ケア)+M(お金)」の視点から統合的に解決できるモデルを研究し実践することを目的とする。

実施体制



活動内容と成果

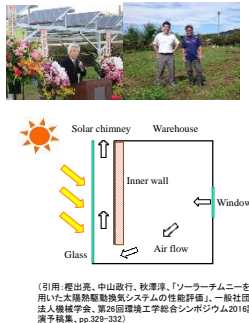
(1) Foods (食糧)

- ①自然栽培の導入による農産物の高付加価値化
→新たな農法(チェーン除草など)へのチャレンジ
- ②耕作放棄地・農地を維持
→地域の小中高生や都市部の大学生、地域・都市生活者の協力によって米、みかん、えごま、ひまわりを作付
延べ150名を超える協力者



(2) Energy (エネルギー)

- ①ソーラーシェアリングの導入
→営農型の太陽光発電の実現
- ②ソーラーチムニーを用いた太陽熱駆動換気システムのシミュレーション
→実際の作物の保管倉庫を対象に集熱量の方位依存性や最適パラメータを明らかにした



(3) Care (人間関係、教育)

- ①地域の未来を担う人材育成
→小田原総合ビジネス高校にて地域の文化・資源の再発見と資源化に係る授業の実施
- ②地域の文化・資源の再発見による地域・世代間連携事業(商品開発)の実施
→耕作放棄地で栽培されたみかんを活用した商品開発



(4) Money (地域循環のお金)

- ①持続に必要な資金を確保
→年間1500円/坪の純利益を得るために、みかんアイスやジュース、営農型のソーラーシェアリングを実践



(5) 新たなファンの獲得

- ①都市と地域を繋ぐ体験型ツアーの開催
→都市部の親子30名の参加

結果、考察ならびに今後の展開・課題

- 第一目標であるF(食)とE(エネルギー)について自給の地への変革が目に見える形で実現できた。
- 現状、主体者が限定的であるため、継続的な活動につながる人材育成や交流の場づくりが必須である。
- 地域に仕事をもたらすCare(人間関係、医療、介護、福祉、教育など)の具体的方法の検討。
- 持続に必要な資金を確保する新たな取り組みが必要。クラウドファンディングに挑戦。
→現状では年間850円/坪の純利益。ただし人件費は含まれていない。
- 地域性に配慮した実践的な統合マネジメント手法(プログラムマネジメント)の確立。

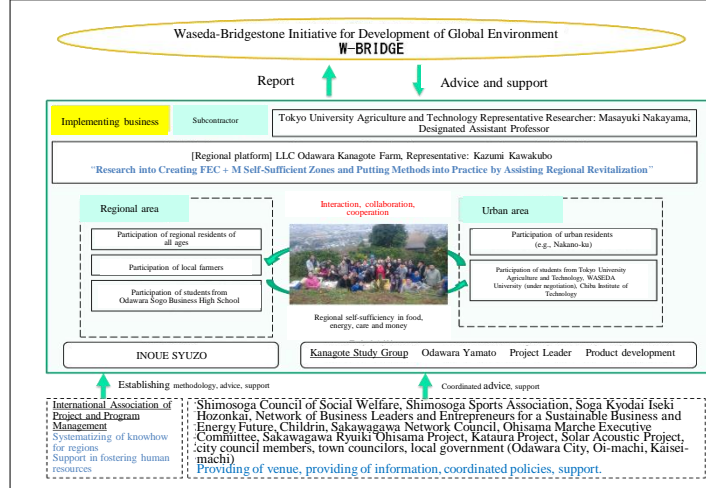
Background and Objective of Research/Activities

- Initiatives are being implemented centered on residents to solve regional problems, such as restoring and maintaining abandoned fields and rice paddies in Odawara City of Kanagawa Prefecture.
- Someone has to find solutions to this regional problem with a sense of urgency, or the burden will be too great.
- Heavy burden on entities under current circumstances.
- Unable to ensure sustainability if current conditions were continued.



In the past, regional societies, cultures and economies had been regarded as being separate from one another. But the objective is to integrate all of these elements into one, to carry out research into a model, which is capable of solving problems holistically from the perspectives of FEC (food, energy, care) + M (money), and putting it into practice.

Implementation System



Detailed Activities & Results

(1) Foods

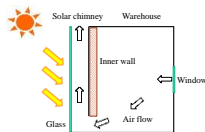
(1) Using natural cultivation to add value to agricultural products → Taking on challenges in new farming methods (use of, e.g., chain weeder).

(2) Maintaining of abandoned farmland → Planting of rice, mandarin oranges, wild sesame and sunflowers with the cooperation of local elementary, junior high school and high school students, as well as university students from cities, and local and urban residents. A total of over 150 volunteers.

(2) Energy

(1) Implementing of solar sharing → Realizing business agriculture-style solar power generation.

(2) Simulating a solar heat ventilation system using a solar chimney → Clarified the orientation dependence of the amount of heat collected and the optimal parameters at an actual storehouse for crops.



(Taken from "Performance Evaluation of a Solar Heat Ventilation System Using a Solar Chimney" by Ryo Kanbade, Masayuki Nakayama, and Atsushi Akikawa. Pp.129-132. Proceedings from the 20th Symposium on Environmental Engineering, The Japan Society of Mechanical Engineers)

(3) Care

(1) Fostering of human resources that carry the future of the region on their shoulders → Running of classes to rediscover the culture and resources of the region, and turn things into resources at Odawara Sogo Business High School.

(2) Running of classes to realize cross-generational and cross-regional businesses (product development) through rediscovery of the regional culture and resources → Product development using mandarin oranges grown on abandoned land.

(4) Money

(1) Securing capital needed for sustained efforts → Selling of mandarin orange ice cream and juice, and implementing of business agriculture-style solar sharing to ensure a net profit of 1,500 yen per "tsubo (3.3 m²)" per year.

(5) Attracting new fans

(1) Holding of workshop tours to build connections between urban and regional areas → Participation of 30 parent-child groups from cities.



Results and observations, and future outlook and challenges

- With regard to the first objective of F (food) and E (energy), transformation toward self-sufficiency was achieved in a visible way.
- Only a limited number of people are currently involved, so there is a need to cultivate human resources to ensure the continuation of activities, and establish a place where people may interact.
- Examination of specific methods for ensuring care in creating regional jobs (interpersonal connections, healthcare, nursing, welfare, education, etc.)
- Need for new initiatives to secure the necessary funds for continuation. Taking up the challenge of crowdfunding.
 - ⇒ Under current circumstances, net income of 850 yen/tsubo per year. However, personnel costs are not included.
- Establishment of practical and integrated management systems (program management) that take regional characteristics into account.