

## REVIEW ARTICLE

## INFLUENCE OF GROUP DYNAMICS ON FARMERS' FIELD SCHOOLS IN NEPAL

Jay Chaurasia<sup>a\*</sup>, Nobel Acharya<sup>b</sup>, Monika Parajuli<sup>c</sup>, Sadikshya Pokharel<sup>d</sup>, Kripa Rijal<sup>d</sup>, Akangksha Lamichhane<sup>d</sup>, Subash Kunwar<sup>d</sup><sup>a</sup>Department of Agricultural Extension and Rural Sociology, Institute of Agriculture and Animal Science, Tribhuvan University, Nepal<sup>b</sup>Department of Agricultural Extension and Rural Sociology, Agriculture and Forestry University, Nepal<sup>c</sup>Institute of Agriculture and Animal Science, Paklihawa Campus<sup>d</sup>Institute of Agriculture and Animal Science, Lamjung Campus<sup>\*</sup>Corresponding Author Email: [jaychaurasia82@gmail.com](mailto:jaychaurasia82@gmail.com)

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## ABSTRACT

Around 200 million rice farmers live in Asia, where the FFS was first created. The brown plant hopper (*Nilaparvata lugens* Stl), which caused major rice production losses, jeopardized some nations' food security and political stability. A second generation of FFS expanded this initial classical FFS for integrated pest management (IPM) on rice to cover other crops and subjects. In actuality, the FFS is not intended to be prolonged. It is envisaged that FFS would continue to positively impact economic, social, environmental, and political assets. In order to inform operational programs about the kinds and pathways of effects that can realistically be anticipated, this study will review the available evidence on the influence of group dynamics on FFS and its effects across the human, social, natural, and financial capital domains of the sustainable livelihoods approach. Knowing about these consequences could aid present and upcoming FFS programs in developing their treatments and evaluations. To tailor FFS interventions in order to maximize their effects, in-depth case studies are required to clarify the linkages between livelihood assets and the influences of the policy, institutional, and external environments. The FFS has the ability to help achieve the Sustainable Development Goals in light of the favorable implications it can have on rural livelihoods. However, care must be taken to ensure the FFS's quality and conduct a fair assessment of all the capital domains.

## KEYWORDS

Empowerment, Gender, Group dynamics Innovation, IPM-FFS

## 1. INTRODUCTION

Group dynamics are the significant interpersonal processes that develop over time within and between groups. These processes influence the group's intrinsic nature and trajectory, including the activities the group takes, how it responds to its environment, and what it accomplishes, in addition to how members relate to and interact with one another (Jones et al., 2022). Over time, groups tend to become more cohesive. Smaller subgroups frequently form inside larger groups. In most organizations, one person is permitted to have more sway over the other participants. Disagreements can result in protracted confrontations even in the most tolerant of group climates since these processes happen in groups predictably frequently (Forsyth, 2018).

A popular strategy in rural development is the Farmer Field School (FFS), which aims to prepare farmers to adjust their agricultural choices to a variety of different field circumstances (Pontius et al., 2002; FAO, 2016). The Food and Agriculture Organization (FAO) first created the FFS in the 1980s in reaction to the detrimental impacts of the Green Revolution on Southeast Asian rice production (Gallagher et al., 2009; Kenmore et al., 1995). In particular, insecticide-induced pest outbreaks posed a threat to food security and illustrated the inadequacy of the prevalent "technology transfer" paradigm in agricultural extension to address such negative impacts. By assisting farmers in making sensible and timely decisions about crop management based on thorough field observations, the FFS proved crucial in the adoption of integrated pest control (Matteson, 2000).

The FFS concept was created for farmer groups that regularly gather with a facilitator during hands-on, field-based sessions throughout the course

of a full production cycle (Pontius et al., 2002). For farmers to be able to adapt and innovate, either individually or collectively, the curriculum placed a strong emphasis on ecological learning, systems analysis, and field experimentation (FAO, 2016). The FFS has been adopted for usage in cattle, fisheries, and crops in more than 90 nations worldwide, starting in Asia (Braun et al., 2006; Waddington et al., 2014). FAO continues to assist FFS in various regions through expertise, connections, and financing. To further the cause of rural development, numerous additional groups and agencies, such as farmer associations, local and national governments, NGOs, and bilateral and international agencies, have embraced the FFS methodology (FAO, 2016). In general, FFS graduates have a significant increase in knowledge about beneficial farming techniques, according to a meta-analysis of FFS impact studies published in 12 (Waddington et al., 2014). Additionally, the FFS increased net revenues (profits) of FFS participants by an average of 19%, increased yields of FFS participants by an average of 13%, and decreased pesticide use of participants by an average of 17% (in FFSs featuring integrated pest management); however, there was notable variation across populations and contexts (Waddington et al., 2014).

In order to provide operational programs with information about the kinds and pathways of effects that can reasonably be anticipated, this study will review the available evidence on the influence of group dynamics on FFS and its effects across the human, social, natural, and financial capital domains of the sustainable livelihoods approach (Scoones, 1998). Knowing about these consequences could aid present and upcoming FFS programs in developing their treatments and evaluations.

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## 2. METHODOLOGY

The article is prepared by the collection of secondary data and information from sources like government reports, published research papers, reports from different organizations, and relevant websites which were studied, and the findings were summarized. The discussion was done with the professors of IAAS so as to prepare the article.

## 3. RESULTS AND DISCUSSION

### 3.1 Current global status of FFS

In response to the failure of the development strategy known as technology-driven modernization, the UN Food and Agriculture Organization founded the Farmer Field School in Indonesia in 1989 (Westendorp, 2012). Growing pest outbreaks and stagnant farm output prompted the need for a new approach to agriculture extension (Braun et al., 2006). The Farmer Field School was created to offer a response using a more inclusive and holistic approach. Asia-wide, more than two million farmers took part. It has been deemed a huge success and has been imitated in other nations throughout the world (Pontius et al., 2002). The Indonesia National IPM Programme on Rice was the first large-scale FFS program to appear, and it gradually expanded to include vegetables and estate crops under various national programs (Gallagher, 2009).

With a few modifications, FFSs were initially created to fit into the prevalent training and visitation system. These modifications included a practical field-based curriculum, extension staff serving as facilitators (rather than being expected to be experts in all fields), and farmer-managed learning plots in place of demonstrations (Miagostovich, 2000). The learning exercises successfully led to the widespread adoption of rice IPM and were based on sound adult education principles. The FFS method has since been applied to a variety of Indonesian research regions and crops. Since their inception in Indonesia, FFSs have extended to a wide range of organizations in Asia, including state extension programs and national and international NGOs all around the region (Fakih, 2002). Asia may be the region where the FFS approach has been used in the most diverse ways outside of IPM, including community forest management in Nepal, gender issues in Indonesia, HIV/AIDS in Cambodia, women's self-help groups in India, and a variety of other areas (Miagostovich, 2004).

The adoption of the FFS approach for recovering biodiversity knowledge is a recent development in SE Asia (Pedigree, 2005; Meijerink et al., 2005). With DANIDA assistance, the livestock and seed FFS programs in Vietnam have helped to diversify the FFS strategy at the institutional level (ASPS, 2005; Dalsgaard, 2005). As a result, the current issue for Latin America's different FFS movements is to create cooperative structures and financial and technical support mechanisms to sustain an FFS movement. Numerous chances for the future have been brought about by the diversity of experience (Braun et al., 2006).

### 3.2 Current status of FFS in Nepal

In order to support higher productivity and the growth of agriculture, the FAO launched the Farmer Field School in Nepal in 1997 in partnership with the Ministry of Agriculture and Cooperatives' Plant Protection Directorate (Singh Bhandari, 2012). Then, from 1998 and 2002, Nepal participated in the FAO Regional Programme of Community IPM in Asia, which was supported by the Australian government (AUSAID). Through a total of 633 Farmer Field Schools, more than 15,000 farmers received training throughout this time (Westendorp, 2012). The integrated pest management aspect of the project was the initial focus. It was a fresh method of extending agricultural production and protecting plants that included more farmers. Since FFS was first implemented in Nepal, it has been more than 14 years. In the middle of the 1990s, the FFS, or *krishak paryaya*, as it is known in Nepalese, was a novel idea. The term FFS is now widely used by organizations and rural residents throughout Nepal. Many NGOs use FFS approaches, and the government has made it its primary tool for extending its reach. Farmers around the nation may talk about Farmer Field Schools, and even the smallest NGO does so (Simpson and Owens, 2002).

The previous two decades have seen significant political development in Nepal. The Maoist movement had just made its demands and revolution official in 1997. Maoists, the army, and citizens engaged in fierce battles as a revolution raged in 2002 (Sharma, 2006). Many men had left their families to avoid violence and to avoid being drafted into the Maoist army or the government. Female-headed households in rural areas were

becoming more prevalent, and more people were moving out for employment or higher education (Gartaula, 2011). Farmers desired additional services or development projects rather than acting independently on their own growth because the majority of the FFSs groups were no longer in existence.

### 3.3 Role of FFS in Farmers' Cognitive and Behavioral Change

Given their potential to facilitate the execution of locally driven intervention schemes that incorporate the input of key beneficiaries and local stakeholders, community-based adaptation efforts (such as farmer field schools) have recently gained popularity (Reid and Huq 2007; Ayers and Forsyth, 2009; Rawlani and Sovacool, 2011; Dodman and Mitlin, 2013). For knowledge and innovations to be useful to farmers, it is imperative to communicate best practices using frames that are appropriate for the local settings of various socio-economic groups, according to a number of prior studies (Moser, 2010; Nisbet, 2010; Nerlich et al., 2010; Moser, 2014).

Farmers' knowledge, risk assessment, and attitude toward climate change have all changed as a result of their involvement in the field school program. In their study, Tomlinson and Rhiney (2018) looked at the specific ways that farmers' participation in field schools has impacted how they perceive, experience, and react to changes in their natural environment, including short- to medium-term changes in climate and the effects that go along with them. Additionally, they came to the conclusion in their research that taking part in community-based adaptation projects like farmer field schools also influences how individual farmers view their own capacity to deal with the consequences of these larger environmental changes and, ultimately, their willingness to engage in other pro-adaptation strategies.

### 3.4 Differences in Participation of men and Women Farmers in FFS

The ratio of male farmers participating in FFS training is higher than that of female farmers. Men are more involved in training than women farmers since they often head their houses and don't require permission to do so (Davis et al., 2012). In a similar vein, they are also exempt from doing any housework. Women in particular are responsible for both farming and household chores. If there is a women's group, a female facilitator, and they have the family's approval, the women farmers participate (Tavva et al., 2013). There is little competition to attend the IPM FFS training. Farmers who belong to a group, whether they are men or women, can simply take part in the training because there is no set selection process. Those who remain interested can so simply participate in the program (Wahaga, 2017).

Farmers of both genders were motivated to attend the IPM FFS training sessions by their own interests, family obligations, and the desire to advance their technical knowledge of integrated pest management (Friis-Hansen et al., 2004). Farmers attend training to advance their careers, meet obligations to their families, and pursue personal interests. Intriguingly, more women than men farmers responded to the opportunity to learn new skills out of self-interest, while more men joined the training to meet their families expectations. The primary motivation for families sending people to training was to make money, however, other families sent members to learn skills, while others followed their neighbors' lead (Regmi, 2010).

### 3.5 The Efficiency of FFS for stimulating farmers' Innovation

The first researchers to examine the diffusion of innovation were Ryan and Gross. They contrasted the traits of farmers who accepted new technology early compared to farmers who adopted it later, and they saw the bell-shaped diffusion curve as the new technology spread throughout the farmer population (Valente and Rogers, 1995). IPM FFSs were created in response to second-generation Green Revolution issues such as pest comeback and resistance, human poisoning, and environmental pollution. These issues were brought on by reliance on pesticides and their overuse (Braun et al., 2006). This does not imply that the FFS cannot be successfully implemented under the challenging circumstances faced by cattle farmers. However, its application needs to be carefully considered in light of the ecological, political, and cultural variety at play.

Small-scale livestock farmers can stimulate innovation quite well with the help of FFSs. Formal agricultural research and smallholder livestock producers can effectively dance to the music that the FFS gives. FFS is unlikely to promote the adoption of a particular component technology on a large scale (Bentley, 2009). Research-based knowledge on the

characteristics of innovations that influence their ease and rate of diffusion is provided by (Rogers, 1995). They are relative advantage, visibility, (lack of) complexity, and divisibility. Even in treadmill settings, where their relative benefit is undeniably superior, more subtle and complicated inventions like accounting and agro-ecosystem analysis do not spread quickly. This raises the issue of how the positive effects of FFS on participating farmers may be expanded past the relatively modest numbers that can be directly touched by FFS. As of the publishing of this article, this question remains unanswered. Programs to mass implement FFS on a large scale are under way in nations like India and Pakistan where state and provincial governments have been persuaded of the extremely beneficial effects of cotton IPM-FFSs on participating farmers as a result of successful pilot projects implemented by an FAO Program (Luther et al., 2005).

#### 4. CONCLUSION

The involvement of multiple actors, each with a different role and set of interests, shapes FFS and the project as a whole in a variety of ways. A complicated network of relationships and inherent power dynamics are ensured by their interactions and (often competing) interests. Even still, the FFS project did not go as intended; rigorous planning of the project's processes and strategy was unable to stop the occurrence of unforeseen results. FFS made some institutional changes by allowing farmers to participate, something that was uncommon in traditional agricultural extension. The FFS initiative introduced participation in a formal way, but it quickly spread among government officials and non-governmental organizations. Farmers embraced this new method of communication with extension specialists. Both farmers and agricultural technicians or extension staff experienced a change in attitude and ideology. Participatory methods of working become commonplace.

#### 5. CONFLICT OF INTEREST

The authors hereby declare that they possess no conflict of interest in this paper.

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