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Developing Leadership in National Agricultural Research System

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Developing Leadership in National Agricultural Research System

1.0 Introduction

Organizations across the globe are undergoing revolutionary changes. If organizations are to emerge successful through revolutionary change, they need a new kind of leadership thinking to meet the challenges and to strategically plan and envision the future of the organization. Such type of leadership does not come easily for people. Leadership is a way of being, a way of perceiving the organization, as well as a process in which skills or competencies are used to mobilize people to take actions that bring about a desired future for the organization¹.

An alarming gap in the supply of leadership talent is an issue that confronts organizations world over. Within the next decade, organizations would begin to feel the impact of the baby-boomers exiting the workplace². The future is likely to bring an increasing demand and smaller supply of leadership talent. It is likely that no organizations would escape these factors. Organizations, therefore, need to look for developing leaders to fill this likely future vacuum.

Six changes, that emphasize the need for innovation in the agricultural sector, have been identified in the context of agricultural development³. These are indicated below.

- Markets - not production - increasingly drive agricultural development
- The production, trade, and consumption environment for agriculture and agricultural products is increasingly becoming dynamic
- Knowledge, information, and technology are increasingly generated, diffused, and applied through the private sector
- Exponential growth in information and communication technology has transformed the ability to take advantage of the knowledge developed in other places or for other purposes
- Knowledge structure of the agricultural sector in many countries is changing, and
- Agricultural development increasingly takes place in a globalized setting.

Change, innovation, and leadership are synonymous for organizations. All these changes confronting agricultural organizations, therefore, necessitate the need for developing the needed leaders in agricultural research organizations. Providing leadership in ensuring national food and nutritional security is one of the guiding

¹ <http://www.evolutionleader.com/topics/papers/EvoLeaderSusOrg.pdf>

² <http://www.leadershipacts.com/article4.html>

³ http://siteresources.worldbank.org/INTARD/Resources/Enhancing_Ag_Innovation.pdf

principles emphasized in Vision 2050 of Indian Council of Agricultural Research (ICAR)⁴.

1.1 The need for developing leadership in National Agricultural Research System

In the past, the National Agricultural Research System (NARS) in India did provide outstanding leaders but their number had been relatively small. These successful leaders exhibited exceptional leadership qualities and vision that led to a number of revolutions in agricultural sector which ensured food security and poverty alleviation to considerable extent, and made the system proud of its contributions. The examples of green revolution, white revolution, yellow revolution, and those in the horticulture and fisheries sectors bear testimony to this fact. Earlier research studies and experiences revealed that leadership approaches and styles during different era varied widely and mainly relied on personalities (Joshi et al., 2010).

A preliminary research study indicated that the leadership effectiveness at different levels in the national agricultural research system is rather 'average' to 'moderate' with few exceptions. There is, therefore, an urgent need to develop leadership capabilities to address emerging global challenges in agriculture (Manikandan, 2013).

2.0 Developing Leadership – The Need and the Challenges

2.1 Where do leaders fail?

“Where are all the leaders?” is the question that often bogs the minds of people. People may often wonder whether there is anything left to be said on the topic. A search on amazon.com reveals more than 2,80,000 titles on leadership. Again, tens of thousands of pages are written about leadership in magazines and journals every year. Yet, the 'right' leaders are scarce in organizations. Studies indicate that significant majority of people who leave their organizations do not quit their company; they quit their boss. 'Boss compatibility' perhaps tops the list of 'what I look for in my workplace'. Employee studies indicate that 58 per cent seldom (if ever) are thanked by their leaders for a job well done; 76 per cent seldom receive written thanks from their managers; 78 per cent seldom receive promotions based upon performance; and 81 per cent seldom receive public praise in the work place (Hunter, 2004). The major focus for organizations in general, and Indian Agricultural Research System in particular, in the coming years, is to meet these challenges of dysfunctional aspects of leaders.

It is not uncommon in organizations for people to occupy the leadership position by virtue of years of experience than by the realistic assessment of their capabilities in terms of leadership skills. Experience is definitely not the key to effective leadership.

⁴ <http://www.icar.org.in/files/Vision-2050-ICAR.pdf>

Experience would count only if the individual makes it count. There is, therefore, a definite need to build the capacity of leaders and prospective leaders to develop effective leadership qualities, thereby avoiding ‘good leadership’ vacuum in the system. That leadership is a learnable skill is rather well documented. It is recognized that the old ways of leading through command and control are largely ineffective when working with a diverse workforce in the organizations. The vast majority of Generation ‘Y’ers do not trust “power people”. A definite metamorphosis has to be brought among the knowledge workers, who rise to the leadership position, through appropriate capacity building activities, specifically catering to different levels of people in the organization.

2.2 Why should academic Institutions be led by top scholars?

Various reasons are pointed out (Goodal, 2009) to substantiate the fact that academic institutions are to be led only by top scholars and not by persons from administrative cadre. These include the following.

- A leader must be credible to the followers. An accomplished scholar appears more credible, which enhances a leader’s influence
- Leaders with high technical ability have developed expert knowledge about the organization’s core business – which are research and teaching
- Selecting a top academic to lead a research institute/university sends out a signal about priorities
- The best universities are led by top academic persons
- The best universities are led by the most-cited researchers
- Better universities appoint better researchers to lead them

In view of these documented information, academic persons are preferred to lead the research institutions. However, the problem with the researchers is that they often get too close to their subjects. It has been observed that the metamorphosis from a researcher to a leader has not been good with quite a few leaders of research institutes. In order to transform to become a leader from being a research scientist, both a self-introspection and a system intervention are needed.

2.3 Perception and reality do not match - what do we infer from research studies?

A research study conducted with the scientists and prospective leaders of the Indian Agricultural Research System indicates that the scientists do not look for capacity building programmes in management-related areas. Priority index (on a scale of 5) for the five major themes considered in the study (Manikandan and Anwer, 2008), as expressed by the respondents, is presented in table 1.

Table 1. Prioritization of Themes

S. No.	Theme	Priority Index
1.	Research Project Management	3.73
2.	Human Resource Management	3.38
3.	Administration and Finance Management	2.96
4.	Institution Management	2.89
5.	Information and Communication Management	2.34

The research managers, who are basically experts in their technical fields, probably continue to have more affinity to undergo training and capacity building in the technical aspects than management aspects, in spite of having risen to managerial positions. This substantiates the observations made by Arnon (1968), who observed, “The management of the agricultural research organization, at all its levels, is, in most cases, in the hands of veteran agricultural research workers who have risen from the ranks. This is as it should be. However, here we have people who have usually been conditioned to averseness to administration in all its manifestations. They are then made responsible for managerial activities in an extremely complex field, for which they have had little or no training whatsoever and for which their only qualifications are their individual character traits and standing with their research colleagues. Administrative understanding is usually incidental and rarely present”.

Common assumption of any capacity building is that capacity is linked to performance and that the capacity of people can be developed. A need for capacity building is often identified when performance is inadequate or falters. Among the various management topics indicated for training, ‘leadership’ as an area for training was given a very low requirement index of 2.28 on a scale of 5 (Manikandan and Anwer, 2008). Scientists, who have reached research management positions, probably perceive that they do have all the skills of leadership and that they need not have to undergo capacity building in leadership. Contrary to this perception, research carried out on some of the leadership attributes points out definite shortcomings in the leadership capacity of scientists in the NARS (unpublished survey research data). The data of the research findings are presented in table 2.

Table 2. Results of Leadership Survey among Scientists of NARS

Leadership quality	Per cent in each category		
	Readiness for leadership role	High (6%)	Moderate (90%)
Charisma	Oozing charisma (4%)	Moderate (32%)	No charisma (64%)
Leadership effectiveness	Highly effective (12%)	Moderately effective (58%)	Less effective (30%)
Assertiveness	Very assertive (1%)	Reasonably assertive (25%)	Average to low (74%)
Resilience	Low (65%)	Moderate (32%)	High (3%)
Time management	Poor to average (53%)	Good (44%)	Very good (3%)

The research study clearly indicates that majority of the scientists are moderate to poor with respect to the six characteristics, which are very essential to become effective leaders.

It is an established fact that the success or otherwise of any organization depends mainly on one individual who leads the organization. In the growth cycle of any organization, peaks or troughs are witnessed which directly correlate with the effective/ineffective leaders steering the organization at a particular point of time. It is, thus, obvious that the scientists in the National Agricultural Research System, having moderate to poor strengths in important characteristics essential for exhibiting effective leadership, need to be provided opportunities to enhance their capacity for leadership.

2.4 What are the presumptions for capacity building in leadership?

Some of the presumptions that emphasize the need for capacity building for leadership effectiveness include the following.

- There is a need to develop the second-line of leadership to avoid the future likely vacuum to be created in the system. It may not be out of place to introduce a term “Precision leaders”. By “precision leaders” it is meant that ‘right type’ of leaders are to be developed at the ‘right time’, for the ‘right purpose’, in ‘right numbers’, with a clear purpose to facilitate them occupy the ‘right position in the right institutes in the system’ in the coming years.

- Knowledge creators, who constitute the major segment of agricultural research organizations, definitely require a different way of being managed and they look forward to a different type of leadership role and persona. Instead of getting people from the administrative stream to lead a research and academic organization like agricultural research organizations, there is definite need to “develop leaders from academia”.
- Middle-level managers who are in the ‘middle zone’ of the organization need to be developed through leadership programmes to create high performing organizations.

3.0 Opportunities for Developing Leadership

3.1 What capacity needs are essential for developing leadership?

Whereas the literature is abundant with a lot of diverse information on the capacity needs in leadership, it may be worthwhile to consider following two of the models for developing need-based programmes in leadership development.

3.1.1 ASARECA/PICO model

One model which would be of value in planning leadership development programme is the ASARECA/PICO model of leadership development⁵, which has been suggested specifically for agricultural research system. This model is a very comprehensive one, which suggests the following five important areas to meet the capacity building needs in leadership. The model is presented in figure 1.



Figure 1. ASARECA/PICO Model of Leadership Development

⁵ <http://www.asareca.org/resources/reports/SCARDA%20article.pdf>

This model focuses on the concept of ‘systemic competence development’, with diverse approaches aimed at directly enhancing the performance of the leaders of the organization. The capacity building programme focusing on these five key competence areas in management of research organizations and programmes would enable the leaders and prospective leaders of the National Agricultural Research System to professionalize their overall performance as leaders and managers.

The Mahavakya of leadership process also emphasizes “to be” as the most important component of development of leadership “To Be” component in the Mahavakya of leadership, which emphasizes the personality of the leader as one of the most important determinants for being a successful leader, is what is emphasized in PICO model as “Managing self – self-development for leadership”. In fact, the strength of “To be”, as otherwise “managing self – self-development” in the above model, determines the strength of the other three components as enunciated in the Mahavakya of leadership. Oliver Wendell Holmes said it right in his words “What lies behind us and what lies before us are tiny matters compared to what lies within us”. Researchers on organizational change tend to agree that leading change is, in effect, the same thing as leading. Leadership is, therefore, very crucial in organizational change management. Leaders need to understand the reasons for the failure of change and should be able to adapt their leadership styles and orientation to foster radical change in the organizations (Manikandan, 2010). Leaders, therefore, need to develop capacities to be successful change agents. Leadership skills and attributes, required for successful change management, are emphasized in the second component “Facilitation for change” in the leadership model presented above. As indicated earlier, we need to develop leaders of agricultural research organization from the academia, i.e. scientists, rather than picking people from the administrative services to lead the group of scientists in agricultural research organizations. One of the major focus areas for the leaders of agricultural research organizations is, therefore, to bring about excellence in research among the workers and to enhance research productivity. “Managing research for development and quality of science”, therefore, becomes a vital component for leadership development. Leaders have a great role to promote “teamwork” in the organizations and they should be adept at “networking” capabilities to facilitate partnership with other institutions and the needed institutional arrangements for impact. In fact, it is pointed out that leaders focus on five kinds of “work”, viz. homework, hard work, smart work, team work, and network. “Managing unit/team” and “Facilitating partnerships and institutional arrangements for impact”, therefore, are important components of the model. Any leadership capacity programme focusing on these five important areas indicated in the model above would provide adequate organizational and leadership competencies.

3.1.2 NASA leadership model

NASA (National Aeronautics and Space Administration) had come out with a Leadership Model, which is used as a base for their leadership development programmes. The following model, adapted from NASA model⁶, in conjunction with ASARECA model could provide the necessary focus needed in different leadership programmes.

Table 3. Leadership Competency Model (Adapted from NASA)

Areas	Personal Effectiveness	Leading People and Change	Business Acumen	Building Coalitions	Discipline Competency
Definition	<ul style="list-style-type: none"> Emphasizes on the ‘Inside-Out’ approach to personal and interpersonal effectiveness Emphasizes on starting first with self; even more fundamentally, to start with the most inside part of self, character, and motives The inside-out approach says that private victories precede public victories This core area focuses on the “how” (attitudes and behaviours) and not just on “what” to do 	<ul style="list-style-type: none"> Involves the ability to lead people and manage change and development towards meeting the organization’s vision, mission, and goals Inherent to this core competency area is the ability to provide an inclusive workplace that fosters: <ol style="list-style-type: none"> development of others facilitates cooperation and teamwork supports constructive resolution of conflicts planning and managing change and innovation 	<ul style="list-style-type: none"> Involves the ability to manage human, financial, and information resources strategically 	<ul style="list-style-type: none"> Involves the ability to build coalitions internally and with other agencies, government, non-profit, and private sector organizations, and international organizations to achieve common goals 	<ul style="list-style-type: none"> Involves the ability to understand and maintain a high-level competency in functional discipline (e.g. science, engineering, professional, administrative) Ability to understand the work associated with the organization and to create a vision for functional programmatic excellence
Competencies	<ul style="list-style-type: none"> Self-awareness Self-confidence Self-motivation Emotional intelligence Communication 	<ul style="list-style-type: none"> Managing conflict Developing others Building team 	<ul style="list-style-type: none"> Driving business development Managing risk Managing resources 	<ul style="list-style-type: none"> Building trust Partnering Demonstrating political savvy Influencing Negotiation 	<ul style="list-style-type: none"> Understanding the core subject/ discipline Maintaining /demonstrating

⁶ <http://leadership.nasa.gov/Model/Overview.htm>

Areas	Personal Effectiveness	Leading People and Change	Business Acumen	Building Coalitions	Discipline Competency
	<ul style="list-style-type: none"> skills ▪ Feedback ▪ Time management ▪ Commitment ▪ Willingness to learn 	<ul style="list-style-type: none"> ▪ Interpersonal skills ▪ Creativity and innovation ▪ Flexibility ▪ Resilience ▪ Thinking strategically 	<ul style="list-style-type: none"> technology ▪ System awareness for doing business effectively – administrative, finance, and vigilance procedures ▪ Organizational strategy ▪ Managing knowledge 	<ul style="list-style-type: none"> ▪ Understanding organizational culture 	<ul style="list-style-type: none"> technical credibility ▪ Results-driven ▪ Ensuring safety ▪ Continual learning ▪ Championing ideas

3.2 Rationale for addressing leadership capacity at various levels

A look at both the models indicated above points out that the major aspects to be covered in leadership development programmes need to focus on aspects related to i) Managing self -Personal effectiveness ii) Leading people and facilitation for change iii) Business acumen iv) Building teams and coalitions, and v) Managing excellence through competency. The relative focus on these areas could be slightly different for different levels of clientele. Again, the actual topics that would be covered in these broad areas could be fine-tuned to match with the time available in the programme and the needs expressed by the participants of any specific programme.

In the backdrop of the realities detailed above, it is understandable that the current leaders in agricultural research organizations as well as those prospective leaders who are presently occupying senior-level position in the organizations but are likely to take up the leadership positions in the time to come need to be provided with appropriate HRD interventions to develop capacity in leadership. Executive Development Programme (EDP) on Leadership Development is suggested for the leaders in position, whereas Management Development Programme (MDP) on Leadership Development is suggested for the prospective leaders. The rationale behind the proposed programmes and the key leadership issues/topics to be addressed through them are presented below, for the two types of clientele.

3.2.1 Executive Development Programme on leadership development (for the leaders in position)

The rationale for addressing the leadership capacity of the current leaders is indicated below.

- Changed dimensions in agricultural research demand effective application of leadership principles and ideas to respond to the emerging challenges

- Expanding stakeholders and dwindling resources demand more effective leadership

Keeping in view the above rationale, the following themes are suggested for EDP.

- Vision, challenges, and opportunities
- Setting organizational direction to meet the changing scenario
- Developing competencies to face existing and new challenges
- Developing people to gain commitment for performance
- Creating a climate to foster research excellence
- Promoting change and innovation
- Promoting teamwork
- Building next-gen leaders
- Projecting innovations to the society

All the themes indicated above need to be addressed through experiential learning approach, where case studies, success stories, group discussion, and sharing of experiences should be extensively used to develop understanding and needed strategies.

The topics under these various themes can be fine-tuned and modified depending on the actual focus needed for a specific group and also to fit into the time duration of the programme. A five-day programme for EDP should be adequate. The major focus for this programme would be on business acumen, developing coalitions, managing performance and people, with a provision for presentation on self-audit for personal excellence. Essentially, this programme should provide a platform for existing leaders to share experiences, develop strategies, and learn from case studies as well as from others' experiences. By the end of the programme, the participants should be able to develop a road-map for enhancing their leadership excellence by a self-introspection of their current strengths and weaknesses with respect to their leadership skills.

3.2.2 Management Development Programme on leadership development (for prospective leaders)

The prospective leaders need to undergo the needed metamorphosis to take up the leadership position and to be effective leaders. The following rationale would justify the need for planning and implementing suitable leadership capacity initiative for the prospective leaders.

- There is a need to develop the second-line of leadership to avoid the future likely vacuum to be created in the system

- The agriculture and agri-business climate is getting more and more challenging today than ever before
- Competition is global, even though the development focus could often be local
- It is getting more and more difficult to create a high performing organization with the changed culture and values prevalent among the workers
- Knowledge workers of agricultural research organizations need to be approached and led differently, while respecting their talent and ego

Some of the key issues that need to be focused in this programme would include the following.

- Understand one's own personality and behaviour dimensions
- Increased personal effectiveness and performance
- Transition from individual performer to lead a team
- Build and maintain relationships to get work done
- Deal effectively with conflict
- Learn to delegate
- Develop self for enhanced leadership effectiveness

The approach for this programme would also be essentially experiential, with a wide variety of andragogical approaches indicated for the EDP, in addition to providing opportunities for the participants to undergo structured experiences through role play and games.

As indicated for EDP, the topics under various issues indicated above may be fine-tuned/modified as needed. Duration of 10 days for MDP should be adequate enough. The major focus in the MDP would be more on self-introspection and personality development, which form the foundation for building leadership capacities.

4.0 Actualization and Experiences

With the backdrop of the existence of the need to develop leadership in the National Agricultural Research System (NARS) and with the strength of the framework/models on leadership development available in leadership literature and with institutions across the globe, the National Academy of Agricultural Research Management (NAARM), the premier management training institution for building capacities in NARS, went through various stages of actualizing the leadership development programmes for the scientists of Indian Council of Agricultural Research (ICAR).

4.1 The genesis and beginning phases of experience

The Academy (NAARM) was conscious of the need for personality and leadership development for the scientists of the system. This fact is enunciated and well documented in the Mahavakya of Leadership detailed above. This is evident from the fact that the Academy, on its own strengths, initiated and offered programme on “Leadership and Personality Development”, way back in 2002. Between 2002 and 2007, the Academy organized six such programmes for the senior-level scientists in the system (both Senior Scientists and Principal Scientists) to facilitate them move into leadership position. A total of 72 scientists (an average of 12 participants per programme) passed through these programmes. A look at the participation intensity in these six programmes, which ranged from 6 to 16, indicates that there was no serious felt-need among the scientists in the system to go through a systematic programme of leadership development. That the scientists, on their own initiative, are perhaps not interested in undergoing capacity building programmes in leadership is also well documented through our research findings, which are detailed above. This is obvious, as scientists always like to go for capacity building in their own narrow areas of discipline/subject specialization. This categorically points out the fact that there is a need for system-level formalization for mandating the need to undergo leadership development programme.

With the launch of World Bank-sponsored National Agricultural Innovation Project (NAIP) in ICAR during 2008, NAARM was entrusted with the responsibility of organizing capacity building programme on leadership development for the project leaders and other senior-level scientists in the system. Between 2009 and 2011, three MDPs on Leadership Development for transition to National Agricultural Innovation System were organized for the benefit of scientists of the system. This indirect requirement, covertly imposed by the sponsored project, helped in enhancing the participation of scientists in these programmes. The participation in these three programmes showed a substantial increase, with the average participation increasing to 21.3. These programmes had participation of both the Senior Scientists and Principal Scientists of ICAR. This has happened due to the following reasons: i) During the initial programme, the Academy allowed both these levels of scientists to participate, without focusing on one target group of scientists; ii) Both the Senior Scientists and Principal Scientists, who were leading projects, participated, as this programme was meant for NAIP project leaders. With the total of nine programmes organized by NAARM between 2002 and 2011, 136 scientists were trained on leadership development. This works out to a very small average number of 13.6 participants per programme, which is negligible (a mere 1.2%) with respect to the total number of Senior Scientists and Principal Scientists (1132) in position, as indicated in table 4.

Table 4. Proportion of scientists trained on Leadership over initial 10 years

Scientific post	Senior Scientists	Principal Scientists/ Heads of Divisions	Total Number of Scientists
In position as of 2011	645	487	1132
Leadership Programmes over years	2002-07	2009-11	Total Scientists Trained
Scientists trained on Leadership	72	64	136
Proportion (%) of scientists trained in ten years			12.0

4.2 System intervention and stabilization

In view of these reasons, there was dilution in the efforts of NAARM to have a target group-focused leadership development programmes. Realizing the need for leadership development for scientists and to have a target group-focused leadership programmes, a National Consultation was convened at NAARM with the participation of top 20 of ICAR in January 2011, during which it was decided that NAARM should conduct Leadership Development programmes for the Principal Scientists and Heads of Divisions (Prospective leaders) and for scientists in Research Management Position (RMP) who have already moved into leadership position. Two different programmes were proposed, viz. MDP on Leadership Development (a pre-RMP programme) for the Principal Scientists/Head of Divisions to enable them have a smooth transition to leadership position, and EDP on Leadership Development for the newly-selected RMP scientists who have freshly moved into leadership position. Two MDP and two EDP programmes were suggested per year to cover the senior-level scientists and RMPs in the ICAR system. Initially, the MDP was suggested for 21 days. However, with the experience of the first programme and with the difficulty for the senior-level scientists to be away for a long time from the institute and from research work, the duration of the MDP was reduced to 12 days from the second programme. EDP on Leadership Development was proposed for five days. For senior-level scientists to move into RMP cadre, graduation through MDP on Leadership Development was made mandatory and for the newly-selected RMPs, it was made mandatory that they should pass through the EDP on Leadership Development within the first six months of their joining the research management position. An executive order was passed to this effect by the ICAR. In view of the system enforcement and support, these programmes had gained popularity and success with time.

4.3 Programmes, content, and participation

With the executive orders being taken out for these programmes during 2011, the Academy planned and organized MDPs and EDPs on Leadership Development. The major focus in these programmes essentially centred on the major areas indicated in the ASARECA model and NASA model described above.

The major focus themes in the MDP on Leadership Development are Personal effectiveness and Core leadership skills that include leading people and change, with the needed input on business acumen related to administrative, finance, and vigilance procedures. In the EDP on Leadership Development, the major focus areas are Leading people and change, Business acumen with inputs on administrative, finance, vigilance and budget procedures, Building coalitions, and Personal effectiveness with the provision for self-audit. The actual topics that were covered varied depending on the needs of the participants, the feedback from participants of the earlier programmes, and the time.

The details of participation in these programmes are presented in table 5.

Table 5. Programmes Organized and Participation (2011-2015)

Programme	Number of Programmes	Total Participation	Average participation per programme	Average participation per year
EDP on Leadership Development	8	113	14.1	28.3
MDP on Leadership Development (a pre-RMP programme)	9	285	31.7	57.0

The average participation in these programmes was high and it is increasing gradually every year. These point out that there is a gradual sensitization among the scientists of the system on the need to undergo leadership development programmes.

Average participation in leadership programmes for senior-level scientists, over the years, is presented in figure 2. The figure points out the fact that the participation in the leadership development programmes could increase only when these are formalized across the system and are made mandatory for movement to higher management position. This is evident from the participation in the pre-RMP MDP on Leadership Development programme, which has been mandated across the system.

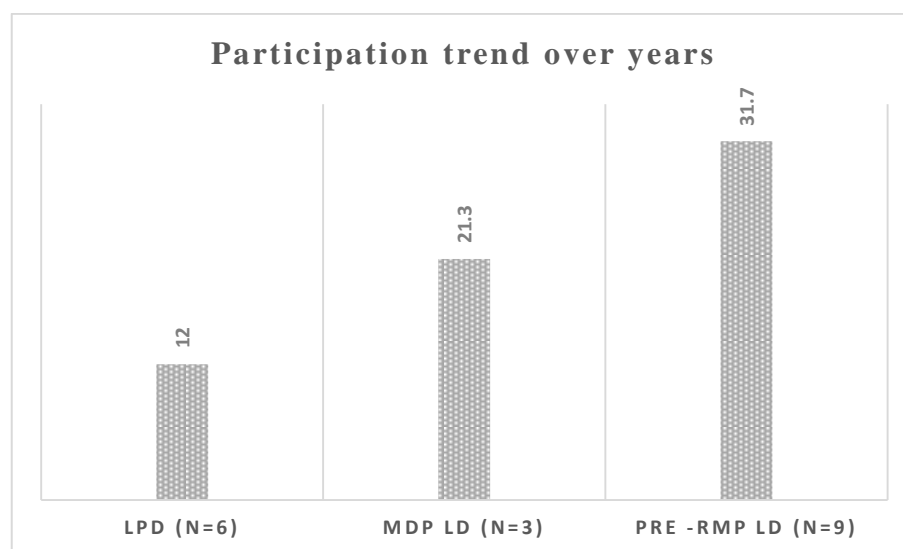


Figure 2. Average number of participants in MDP over the years (2011-15)

The following details presented in table 6 give a picture of the total number of scientists in position in these categories⁷ and the proportion of this number trained through leadership development programmes.

Table 6. Proportion of Employees in the Respective Cadre Being Trained

Employees in Position	Number in the Respective Cadre	Number trained through MDP/EDP per year	Per cent Trained (%)
Principal Scientists	689	57.0	8.3
RMP scientists	136	28.3	20.8

The data in table 6 indicate that about 20.8 per cent of the RMP cadre scientists, which are mostly filled by Principal Scientists in the system, could be trained. On the other hand, about 8.3 per cent of existing Principal Scientist cadre are prepared for transition to RMP cadre through MDP on Leadership Development. This perhaps point out the need for increasing the number of Principal Scientists trained through MDP, to provide a greater pool of Principal Scientists eligible for consideration to RMP cadre.

⁷ DARE Annual Report 2014-15

This perhaps is possible by increasing the number of MDPs on Leadership Development organized every year. At present, NAARM is organizing only two MDPs per year. Perhaps there is a need to increase this to four per year. This is an important pointer, as the present number of participants per programme (average of 57.0) is a pretty large number, and for effective learning in the programme it may be worthwhile to restrict the number between 35 and 40. Increasing the number of MDPs from two to four would give the twin benefits of increasing the total number of Principal Scientists trained per year and also in maintaining an optimal participation for effective transfer of learning. For EDP, two programmes per year would be adequate and may be continued at the same level.

5.0 Effectiveness of Leadership Development Programmes

The evaluation of effectiveness of leadership programmes primarily consisted of observations / interactions with participants and their feedback to obtain their experience with the programme. It was followed by sending a structured questionnaire (Annexure 1) to the participants to capture their perception on the knowledge and skill they learned and transferred in their functional areas at the workplace. It also aimed at assessing the effectiveness of the change in the individuals and also in others whom they lead, which would result in improved performance at individual and organizational level. In all, responses were received from 40 participants (approximately 10% of total trained) who went through leadership development programmes at NAARM. Kirkpatrick (1994) model which describes assessment at the level of reaction, learning, transfer and change / result was used to assess the effectiveness.

5.1 Reaction

Observations, interactions, and feedback from the participants indicated that majority of the respondents viewed the programme positively prior to the actual participation in the leadership development programme. Twenty percent of the respondents described that they were being skeptical towards the programme before it began. This was due, in part, to the fact that they did not think of attending such programme and were being nominated to attend the programme. They initially held the view that the training may not influence their leadership development. However, they felt very positive about the programme, once it commenced. The participants went through the process of change from apathy/indifference to acceptance and appreciation, as they passed through the programme. In fact, many of the participants expressed that the programme helped them to function better in the present position, irrespective of the fact whether they could move to the higher position or not.

It is obvious from the response that the participants were very excited to learn about themselves with reference to their personality strengths and weaknesses, their knowledge and skill in other aspects pertaining to organizational behaviour. Some participants expressed anxiety while undergoing psychometric tests and waited anxiously for the results. This was particularly true for individuals who had not undertaken this type of self-analysis or self-exploration instruments prior to this leadership development programme. Participants described the self-assessment test reports to be useful and interesting. Many participants felt that a great deal of things should be known before accepting the leadership position and it was an eye-opener and great learning experience with respect to discussions on emotional intelligence, conflict management, IPR and technology management, purchase procedures, and vigilance management.

5.2 Learning and transfer

Learning assesses the extent to which participants learned new information as a result of the programme, whereas transfer refers to the extent to which participants applied knowledge they learned through the programme. Transfer of learning is critical to the success of a programme. Notwithstanding the fact that learning during the programme is important, the extent to which participants apply what they have learned in practice eventually determines the success of any programme, more particularly the leadership development programmes.

Majority of respondents (65.7%) perceived that they learnt and transferred the knowledge and skill effectively, especially in managing people. Nearly 47% of the respondents perceived improvement in individual efficiency and about 52% of them indicated that they contributed positively to quantity and quality of output in their respective institutes through facilitation and motivation. More than 70% of the respondents expressed that they learned leadership qualities and skills which could change their behaviour at workplace. They reported that they perceived positive influence on the activities they performed in the organization. Moderate to significant learning was perceived (74.2%) in understanding and dealing with the rules and regulations in the administration / finance / vigilance matters.

5.3 Benefits of change

Data were collected regarding perception of the effectiveness of the change. The participants were asked not only what individual changes had taken place but also the effect of those changes on the institute effectiveness. The level of confidence was increased due to participation in the leadership development programme. The changes in the confidence level were perceived to be ranging between 10 and 95 per cent, with an average of 62 per cent. Majority of the participants were successful in understanding the

vision (66.6%), target setting (58.3%), documentation of action plan (57.5%), implementation of action plan (62.8%), accountability (61.1%), developing others (55.5%), relationship building (55.5%), stakeholder focus (70.5%), and strategic thinking (65.7%). It is pertinent to note that 55.5 per cent and 41.6 per cent of the respondents perceived to be highly successful in teamwork and in leading and managing change respectively. It is highly satisfying since one of the major objectives set before the leadership development programmes is to encourage teamwork, and to lead and manage change in the research organizations.

5.4 Effectiveness of leadership development programme on selected quantitative indicators

In order to know the effectiveness of Leadership Development Programmes conducted by the Academy (NAARM), some of the tangible result indicators were assessed from the selected institutes, where the Executive Development Programme participants are Directors since 2011. The participants were selected through purposeful sampling and Directors from the year 2011 were selectively identified since they had enough time to put into practice the learning they acquired through participation in the programme. The following indicators were selected for the study.

- Total publications made in the institute
- Research papers published from the institute
- Proportion of external-funded projects in the institute
- Budget utilized by the institute

The 19 institutes from which the relevant data were collected for this analysis constitute nearly 20 per cent of the total research institutes in the ICAR system. The list is given in Annexure 2.

5.4.1 Total publications and research papers published from the institutes

For the purpose of knowing the effectiveness of Leadership Development Programme on the Directors, it was assumed that they would bring in some positive influence on their scientific and other research staff in making various kinds of publications. Accordingly, the number of total publications and research papers per scientist was plotted in figure 3 for the period from 2011-12 to 2014-15.

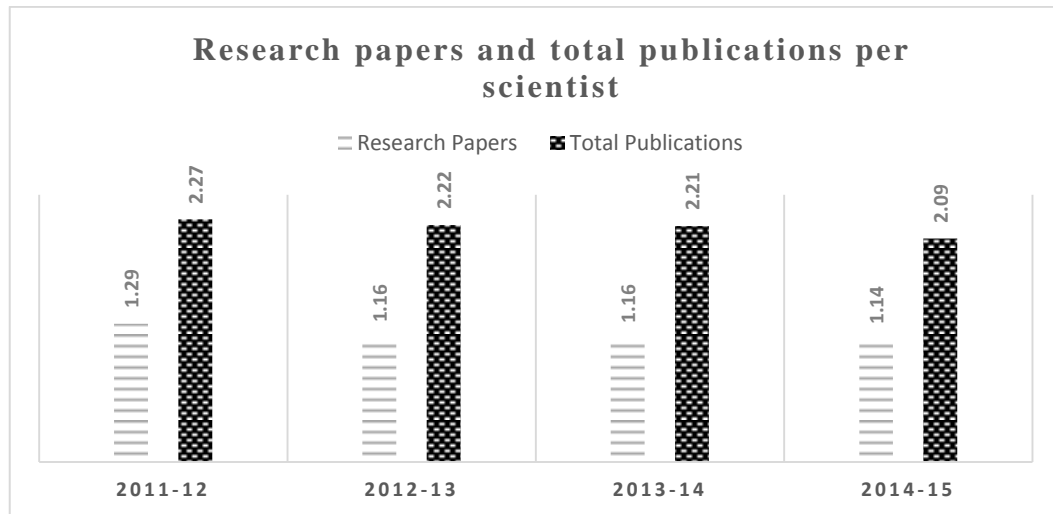


Figure 3. Number of total publications and Research papers per Scientist

Figure 3 indicates that the number of research papers and total number of publications per scientist was more than 1 and 2 respectively. It was almost consistent during the period. The number of scientists increased from 651 to 699 from 2012-13 to 2014-15 in the institutions considered for the study.

It is expected that the effects of facilitation and motivation provided by the institutional leadership could be realized when the young scientists convert the findings of research projects into publications.

5.4.2 Number of external-funded projects operated in the institutes

The number of external-funded projects is one of the indicators to know the research intensity in an institute. Hence, this indicator was chosen to see how the Directors have facilitated in attracting such projects by their scientists. Accordingly, the data on number of external funded projects and total number of projects were collected and the proportion of external funded projects to total projects during the period of analysis is depicted in the figure 4.

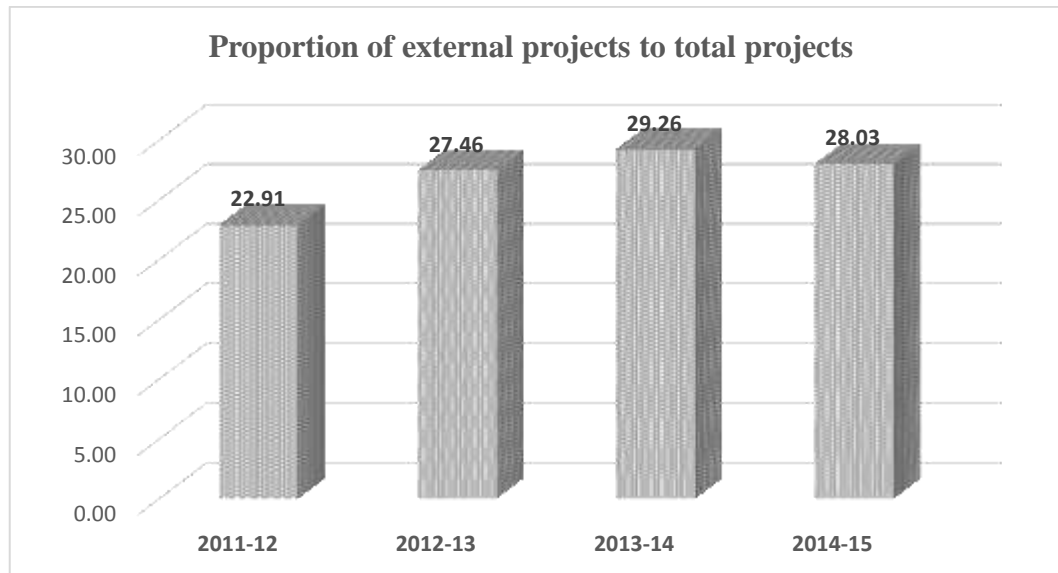


Figure 4. Proportion of external-funded projects operated in the institute

The proportion of external-funded projects showed an upward trend during the whole period (figure 4). It indicates that the institute leadership provided motivation and support to the scientists to attract the external funds. This could perhaps be an effect of participation in the leadership programme, where the participants were impressed upon to act as a facilitator for enhancing the quality and competitiveness in research.

5.4.3 Budget utilization by the institutes

It is well known that the pro-activeness of research management could be measured to certain extent from the amount of budget utilized in the institute. Hence, the information on the budget allocated and expenditure made by the institute during the period was collected and percentage of budget utilized is depicted in Figure 5.

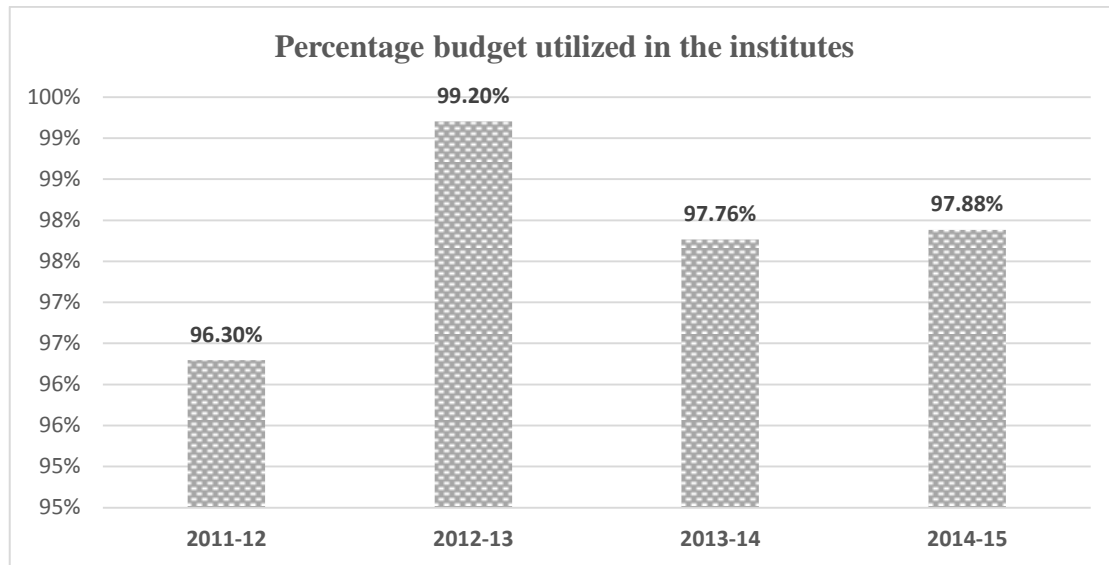


Figure 5. Budget utilized by the institute

It was found that the percentage budget utilized by the institutes was above 96 per cent and it had shown increasing trend during the period.

From the perception and feedback of the respondents and the observations made on the tangible results indicators, it could be inferred that the initiation of leadership development programmes at the Academy started making positive influence on financial management and management of change in the institutes.

6.0 Major Learnings from the Experiences

Experiences of organizing Leadership Development programmes at NAARM, for the benefit of scientists of ICAR, have resulted in the following major learning points.

6.1 System intervention helped

- Scientists excel in their narrow area of specialization in research. However, leadership is different. Scientific organizations have to be led by scientists and academicians, and they need to undergo metamorphosis and transition for the changed and required mindset of leading institutes through participation in leadership development programmes.
- Scientists with excellence in academic and research areas, by their very nature, resist undergoing capacity building programmes in leadership development. There is a need to break this mindset and trend.

- Efforts by a training academy (in this case NAARM) in initiating and actualizing leadership development programmes sowed the seed for system-wide recognition.
- System intervention, system support, and system enforcement are essential to make the leadership development programmes a reality and a success, and eventually to help reap the needed benefits from them. This is evidenced by the substantial increase in the participation of scientists in Leadership Development programmes.

6.2 Effectiveness of leadership programmes felt in the system

- Leadership programme-trained leaders indicated that participation in these programmes made them effective.
- Some of the scientists had undergone similar leadership development programmes from premier management institutes within the country and also from US. The informal feedback from them pointed out that the leadership development programmes of NAARM are more practical, realistic, and beneficial.
- Scientists who went through MDP on Leadership Development had pointed out that they could use their learning from the leadership development programmes during their selection interview, and that helped them to be successful in getting the RMP position. The system waited for a critical mass of Principal Scientists trained through MDP to be built, before it made the participation in MDP mandatory for selection to the RMP cadre. It is satisfying to realize that 20 of the MDP-trained Principal Scientists got selected to the RMP cadre within a few months of undergoing MDP training.
- Effectiveness of leadership development programmes is further evidenced by the consistent results, measured in terms of total number of publications, number of research papers, number of externally-funded projects, and percentage of budget spent in the institutions.

6.3 Future action required

- To meet the large number of existing prospective leaders, there is a need to increase the number of MDPs on Leadership Development (pre-RMP programmes) from two to four programmes per year.
- Principal Scientists in the system need to be encouraged to participate in the MDP on Leadership (a pre-RMP programme) to develop second line of leadership in the system.
- The EDP on Leadership Development for the research managers may continue at the present level of two programmes per year.

- It may be worthwhile if NAARM organizes a workshop or retreat training to the EDP-trained leaders, after about two to three years of being in the position, to provide a forum for them to share their experiences, extent of transfer of learning, and issues that need further focus in the EDP.

7.0 Conclusion

Knowledge workers, who constitute the major segment of agricultural research organizations, require a different way of being managed and they look forward to a different type of leadership role and persona. A planned leadership development programme could help in developing successful and effective leaders in NARS. In planning and organizing two different leadership development programmes to meet the needs of two different clienteles, viz. Principal Scientists and RMP cadre scientists, NAARM has supported the National Agricultural Research System in developing the required pool of manpower with the needed leadership skills. The experience so far disproves the myth that leaders are born and the evidence well establishes that leaders can be developed.

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Annexure 1

**ICAR - NATIONAL ACADEMY OF AGRICULTURAL RESEARCH
MANAGEMENT
Rajendranagar, Hyderabad – 500030**

Effectiveness of Leadership Programmes at NAARM

This questionnaire is developed with an objective to determine the effectiveness of Leadership development Programmes of the NAARM for the period 2012 to 2015 and to know how it is contributing in helping understanding the overall strategic goals of the research managers and delivering their responsibilities. You are one of the valuable participants of the aforesaid programs. Therefore, you are requested to go through the set of questionnaire and complete the same. The information provided by the individual will enable the NAARM to assess the effectiveness of the MDP/EDP on leadership development programs and to further improve the quality and relevance of them in our system.

Your Name: _____ Designation: _____
 Name of the organization _____
 Gender: Male/Female. Age: _____ Years Highest Qualifications: _____
 Experience: _____ Years

1. After attending MDP on Leadership Development (Pre-RMP), have you moved into any higher position

Yes / No

If yes, indicate the position you have moved into:

Indicate, how many months / years after attending Pre-RMP program, you moved into that position

2. Do you think that attending the leadership development program(s) represent good decision for performing your present role?

Yes / No

If yes, what level of confidence do you place on the learning from the leadership development programs: _____ %

If no, what should have been your alternative decision / strategy?

3. What has changed about you or your work as a result of your participation in the leadership programs?
4. How did these programs influence on the way you see things from a leadership perspective?
5. How had these courses equipped you to better influence change within the organization / department / section you are leading?
6. Indicate the extent (by a ✓ mark) to which you think your application of knowledge, skill and behavior learned from the leadership programs had a positive influence on the following areas

Area	Not Applicable	Applies but no influence	Some influence	Moderate influence	Significant influence	Very significant influence
Managing people						
Work output						
Quality						
Efficiency						
Employee Satisfaction						

Area	Not Applicable	Applies but no influence	Some influence	Moderate influence	Significant influence	Very significant influence
System rules & regulations (Admin / Financial / Vigilance procedures)						
Leadership Qualities & Skills						

7. Listed below are the objectives of leadership programs. Please indicate your degree of success in achieving these objectives

Skill/Behavior	No Success	Negligibility Success	Limited Success	Generally Successful	Completely Successful
Understanding Vision					
Target Setting					
Documentation of action plan					
Implementation of action plan					
Accountability					
Team Work					
Developing others					
Relationship building					
Stakeholder Focus					
Communication					
Strategic Thinking					
Leading and managing change					
Conflict Management					
Time Management/ Prioritization					

Annexure 2**List of ICAR Institutes selected for the study on
“Effectiveness of Leadership Development programmes”**

- 1) Directorate of Seed Research
- 2) Directorate of Oil Palm Research
- 3) Directorate of Poultry Research
- 4) Indian Institute of Oilseeds Research
- 5) Central Tuber Crops Research Institute
- 6) Directorate of Weed Science Research
- 7) Central Institute of Freshwater Aquaculture
- 8) National Research Centre on Meat
- 9) Central Institute of Post-Harvest Engineering & Technology
- 10) Central Sheep & Wool Research Institute
- 11) Central Arid Zone Research Institute
- 12) Directorate of Onion and Garlic Research
- 13) ICAR Research Complex for Goa
- 14) Central Soil & Water Conservation Research & Training Institute
- 15) Indian Grassland and Fodder Research Institute
- 16) Directorate of Cashew Research
- 17) National Bureau of Agriculturally Important Microorganisms
- 18) Central Institute of Fisheries Education
- 19) National Research Centre on Camel