

Applying Modern and Ancient Management Principles to improve Sustainability and Profitability of Organic sector at Field level

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Abstract

Agricultural sector throughout the world is faced with more challenges at field level with rapid depletion of available resources. But the current developments in utilisation of available resources are leading to unmanageable and irrecoverable state mostly in developing countries. Organic agriculture promises a better future at all levels of sustainability but its conversion and uptake rate is very low at global level due to the slow recovery time at field level and profitability at socio-economic level. Research at field level shows that applying modern management principles and planning to optimize the organic strategies at field level increases the sustainability and profitability at all levels.

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Introduction

Though technological developments in agriculture show better results but it seems to be a less attractive option for the present generation mostly in developing countries. This is primarily due to its lack of accountability and sustainability at providing quicker economic results and job security. Main reasons include geographic variations of parameters and practices of random and unclear management strategies at field level due to cultural variability. Mostly the gap among policy makers, scientific community and practitioners (farmers) seem to be filled with help of technologies on one side and loopholes are formed at field level in poor application and use of data. Farmers/Organic practitioners are totally collided and burdened by vast and varying information from all sides of scientific communities, technology, media and communication sectors because of information technology revolution. There is a state of confusion at field level in decision making whether to use time tested practices and/or micro level scientific principles with latest technologies. From the research studies it is stated that lack of application of good management principles in agriculture seems to be the prime factor in projecting it as unviable and less attractive sector. Organic agricultural principles (Gomez et al., 2015) are clear to understand but should be carefully managed at field level. This study focuses on how to apply modern management principles and planning with organic principles to ease the practitioner and bring success not only at field level but also socio-economic levels.

Material and methods

The most important stakeholders at field level are farmers and when provided with poor knowledge and management of resources, it becomes the source of ever increasing causes of problems and unmanageable effects at all level. By adopting the management principles of both modern and

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ancient strategies at all level which could increase in performance manyfolds from field level. To achieve field level success, proper planning(Martin et al., 2011) of the related attributes and management strategies of those are necessary as shown in Figure 1. Both the beginners and experienced stakeholders could use the planning strategiesto make organics uptake faster.

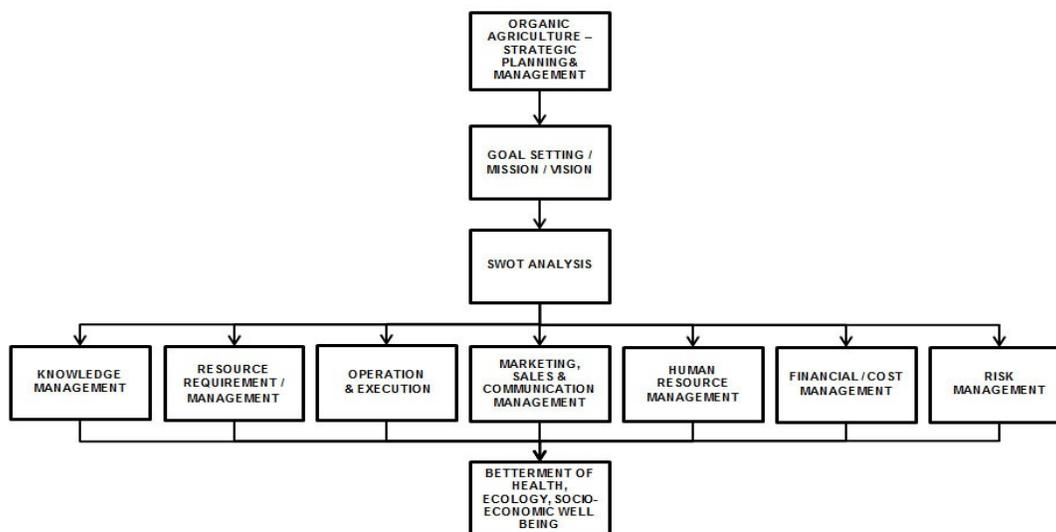


Figure 1. A model of Strategic Planning and Management in Organic Agriculture

Aim / Goal Setting: To utilize the available resources in a sensible manner keeping sustainability as goal in mind, bring good health to all, be beneficial to the society and live a life closer to nature.

Mission: Good future – healthy people and income – reducing money only motive and unnecessary wear and tear of over worked body and mind – thereby reducing our needs and desires directly harming the ecosystem and social system.

Key items to remember: Goal, Organic/Natural System, Knowledge base (Table 1), Project, Planning, Understanding, Discussions, Sharing, Clarifications, Openness, HR, Consulting, On-site visits, Record Keeping, Requirements, Operation & Execution, Monitoring & Tracking, Error Detection & Correction, Success & Failures, Opportunities, Marketing, Cost, Support, Leadership & Management, Collective/Teamwork.

Table 1: Organic Agricultural System: Knowledge Base

Organic / Natural System Process	Organic Conversion Challenges	Cropping & Production Methods	Soil Cultivation Methods	Soil Fertility / Nutrient Management	Seed Conservation & Plant Propagation
Mulching Methods	Water & Irrigation Systems	Weed Management	Integrated Pest & Disease Management	Animals Management	Modern Technology / Equipment Utilisation
Energy Conservation	Waste Management	Weather & Climatic Information	Organic Certification Process	Awareness Of Intensive / Chemical Farming	Records Keeping & Management

Special interest is shown to modern record keeping and management system (Table 2) with the use of digital scanners, cameras and storage devices and use of ancient management principles such as

(Williams 2016) in HR-Operations and Yoga, Meditation, Siddha & Ayurveda in Health (Table 3) reduced the failures and increased the performance manifold at all levels of the organic practices.

Table 2: Modern Records Keeping & Management

Daily/Weekly/Monthly/ Seasonal/Yearly/Longterm		Types Of Record		Types of Data		Mode of Capture & Storage	
To do list	Task done	External source	Own experience	Measurements	Theory	Paper	Digital
				Costs	Image & Videos		

Table 3: Application of Ancient Principles in areas of Organic Practices and Management

Goal Setting	Human Resource Management	Operations & Execution	Medical Treatments
Inspired by greater, selfless & extraordinary purpose	1. Focus on performers than results. 2. Self motivating than exercising control	1. Sustainability from the inside out 2. Resilience – Recovery from failures	Use of Yoga, Siddha & Ayurveda Herbs for humans & animals

The research study mainly focuses in bringing out the planning for resource requirement (Table 4 and 5) and cost analyses (Table 4, 5 and 6) at organic field level operations due to lack of planning resources available for organic farmers/practitioners.

Table 4: Resource Requirement / Initial Fixed Cost – I

Land	Water	Electricity	Security & Operations	Transport
1.Land Purchase (Owned/ Leased)	1.Well(Already present)	1.Electricity Connection-Farm-Stay	1.Fire Apparatus	1.Two Wheelers (Personal Travel)
2.Land Clearance	2.Borewell	2.Automatic Starter-	2.Emergency Lights	2.Two Wheelers (Heavy Duty- Load Bearing)
3.Leveling	3.Initial Stage Motor-Pumps	3.Multimeter- Clamp Meter- Continuity	3.Phone/PC/ Internet	3.Three/Four Wheelers-Hand Operated- Load Bearers
4.Roads- Pathways	4.Water Harvest Pond	4.Backup Wire- Blade-Knife- Tapes-Adhesive	4.Alarms-Safety Guards-Boots	4.Small Load Bearing-Hand Pulled Container
5.Labour	5.Secondary Water Storage for Backup	5.Bulbs-Cutter Nose Player- Connectors	5.Security Cameras- Monitors	5.Heavy Vehicle to Market(Optional)
6.Fencing	6.Canals-Pippings -Fittings	6.Safety Guards- Gloves-Sandals	6.Animals-Dogs	6.Animals-Bulls- Carts
	7.Drip/Sprinkler Irrigation Materials	7.Backup-Battery Solar-Biogas Alternatives	7.Agri Drones	7.Clear Pathways
	8.Emergency water outlets throughout the farm		8.Sticks- Weaopons- Baits-Organic Repellents	
	9.Drums-Kits-Big Medium/Small		9.First Aid- Information- Kits- Live Herbal Medicinal Plants-Kits	
	10.Hose			

Table 5: Resource Requirement / Initial Fixed Cost – II

Machines & Equipments	Farm Animals Management	Organic Fertilizer Management
1. Tractor-Ploughing-Extra Attachments(Optional)	1. Cattle/Goat/Chicken	1. Waste Management Shed
2. Power Tiller(Auto-Semi auto)	2. Shed-Ropes-Lightings	2. Farmyard Manure Pits
3. Brush/Weed Cutter.	3. Waste Collection System	3. Shadow Trees
4. Power/Battery Sprayer	4. Water Connection-Pipes-Outlets-Hose	4. Water Connection-Pipes Outlets-Hose
5. Nife-Sickle-Blade-Axe-Chisel-Hammer	5. Drums-Containers-Buckets	5. Drums-Containers-Buckets
6. Digging Hoe-Spade-Rake	6. Foriage Plans	6. Mechanical Tools-Trenching Hoe
7. Traditional/Hand Plougher	7. Feeding-Cleaning	7. Transport-Load Carriers
8. Analog/Digital Weight Meter	8. Medical Kit-Information-(Both Herbal and Allopathy)	8. Filters-Ventury Systems
9. Spanner Kits		9. Safety Gaurds-Covers-Boots

Table 6: Running Cost

Primary	Secondary
1. Field or Land Preparation	1. Field Trips-Communication
2. Tilling-Ploughing-Digging	2. Bund Formation, Irrigation & Weeding
3. Bund Formation	3. Organic Manuring-Preparation
4. Trenching	4. Pest & Disease Control-Spray Preparation
5. Machine Harvesting	5. Natural Pest Control Materials
6. Fuel	6. Servicing of Materials & Equipments
7. Labour	7. Manual Harvesting-Transport-Farm-Markets
	8. Packing-Unpacking-Materials-Bags-Threads
	9. Value Addition-Materials-Labour-Stay-Work
	10. Disaster-Accidents Recovery

Discussion

Our on-field study shows the usage of variety of modern machines and devices in Operation Management of soil cultivation, energy conservation, security and pest and disease management helped us to identify problems before hand and reduced the rework and time. Usage of Auto Power Tillers (Table 5) and digital devices such as Agri Drones (Table 2 and 4) for capturing plant canopy data, field pattern changes and security purposes eased the field operations. It is known that HR Management is the lifeline of whole process. Rigidity and unpredictability in decision making at management level arises because of poor use and understanding of human body, mind and emotional systems and their interaction with the environment. As we have a vast treasure regarding ancient wisdom principles from Yoga, Meditation (Guruji 2011), Naturopathy and Herbal medicines to solve future problems. More scientific research needs to be undertaken in future at bringing it to wide public use and inclusion in organic principles and strategies at all levels.

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