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# **ECONSPEAK: A Journal of Advances in Management, IT & Social Sciences**

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# ECONSPEAK: A Journal of Advances in Management, IT & Social Sciences

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# Study of Diagnostic Evaluation of A Patient with Suspected VAP

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## ABSTRACT

*In the recent past, various advancements have taken place in the management of VAP. Several studies have provided important insights into the relationship of the histology and bacteriology of VAP, various epidemiological researches have allowed the establishment of concepts for empiric antimicrobial treatment, and various updates on state-of-the-art care have been outlined. However, despite these measures, a majority of issues related to the management of VAP remain unresolved and are subject to controversy. This is particularly true for the diagnostic evaluation of a patient with suspected VAP. The lack of consensus regarding the best way to diagnose VAP largely explains why the incidence rates vary so widely from one study to another — from 5 to 50% of mechanically ventilated intensive care unit (ICU) patients.*

**Keywords:** VAP, patient, intensive, care, unit etc.

## 1. INTRODUCTION

The primary task of nursing research is to contribute to the scientific base of nursing practices. Studies are needed to determine the effectiveness of nursing intervention and nursing care. Through research efforts, the science of nursing will grow and a scientifically based rationale for making changes in nursing practice will be generated. As the patients' needs become more complex in the critical care setting nurses with increased expertise are needed to expand the research based knowledge and apply existing knowledge in practice setting. For example the knowledge and correct practices of suctioning is very important for nurses because improper suctioning can lead to hypoxia, cardiac arrhythmias, hypotension, increased respiratory work, unexplained cardio vascular collapse and sudden death. Research is needed to refine suction technique to identify patients at greatest risk for adverse response to suctioning. so also with other procedure that need to be performed skillfully in the intensive care unit (ICU) A researcher recommended that research should be done to assess the teaching strategies which should be used effectively 2 to yield most beneficial results and to determine what skills nurse need to perform independently to improve the condition of the patient in ICU.

Researcher while working in clinical area had come across many situations where staff nurses lacked knowledge in using correct techniques in endotracheal suctioning. The researcher observed that many patients receiving ventilator support needed re intubation because of blocked tubes due to thick mucus plug blocking the endotracheal tubes, nurses pushing the catheter up and down the endotracheal tube, which leads to blood stained aspiration of secretions, no kinking of catheter before insertion, allow prolonged stay of catheter in the endotracheal tube, the tip of the catheter touching outside and getting contaminated etc. Ventilated patients developed pneumonia and other complications which could be prevented. So the nurses need to improve the knowledge and skills in endotracheal suctioning. The researcher was motivated to conduct this study and to provide staff nurses a structured protocol with teaching programme to improve their knowledge and skills regarding care of patient on ventilator.

Over the next decade or so, ICUs began to be created in hospitals across Europe, the USA, and Australasia. In other countries, ICUs are a more recent development - for example, the first ICU in China was established in 1982. Early ICUs were somewhat isolated, slightly mysterious, and rather frightening places; staff and visitors (when allowed) were often gowned with protective shoe covers, even masks - adding to the sense of anxiety for the patient and their families. Patients were often heavily sedated to facilitate mechanical ventilation and in the belief that this approach would reduce patient agitation and discomfort. Visiting hours were highly restricted to avoid any increase in physiologic stress for the patient, any interference with the provision of care, and to limit the spread of infection in these vulnerable patients.

## 2. LITERATURE REVIEW

**Rello J, Ollendorf DA, Oster G, et al (2002)[1]** Ventilator-associated pneumonia (VAP) is a typical nosocomial disease in basically sick patients that is associated to poor clinical and financial results, including longer term of mechanical ventilation, longer ICU and doctor's facility stay, expanded mortality, and expanded healing centre charges. It is the main source of death among nosocomial contaminations, surpassing rates of death optional to focal line diseases, serious sepsis, and respiratory tract diseases in non-intubated patients. The effect of VAP on our human services frameworks is impressive, with evaluations that VAP represents around 17 000 ICU days for every year (2% of all ICU days) and 46 million dollars for every year in the Canadian social insurance framework. Annihilation of this preventable nosocomial contamination would spare lives and save rare medicinal services assets. Given these discoveries, systems that adequately forestall VAP are critically required, and streamlined techniques for all inclusive usage are vital.

**Muscudere J, Dodek P, Keenan S, et al (2008)[2]** VAP is preventable, and many practices have been shown to lessen the frequency of VAP and its associated weight of ailment. We ought to along these lines initially survey the distributed confirmation based rules for VAP aversion. The Canadian Critical Care Trials aggregate at first distributed far-reaching proof based clinical practice rules for VAP counteractive action in 2004, with a refresh distributed in 2008. Groups are a strategy used to execute prove based clinical practice rules. Packs are a gathering of best practices that, when utilized exclusively, are observed to be viable. The Institute for Healthcare Improvement (IHI) pushed the utilization of packs, characterized as 'a little, clear arrangement of practices – by and large three to five – that, when performed all things considered and dependable, have been demonstrated to enhance quiet results'. The IHI built up the 'Ventilator Bundle' comprising of four proof based practices to enhance the results of patients requiring mechanical ventilation and gave the philosophy to package usage and estimation of consistency.

**Zilberberg MD, Shorr AF, Kollef MH (2009)[3]** Although the IHI has distributed positive consequences of Ventilator Bundle usage and VAP avoidance from particular ICU groups on their site, a current deliberate writing survey on the adequacy of the IHI Ventilator Bundle to counteract VAP uncovered major methodological imperfections in the outline, detailing, and aftereffects of the four distributed reviews that were investigated. The methodological imperfections of the reviews included inclination, puzzling, and absence of generalizability and blocked any convincing proclamations about the package's adequacy or cost-viability. These creators inferred that, to guarantee productive designation of the constrained medicinal services assets, thorough assessment of ideal systems for VAP anticipation is expected to set up best practices and make a benchmark against which new advances'



esteem can be evaluated. The ventilator package is not a reasonable quality measure in the ICU as of now.

**Schweickert et al. (2004) [4]** assessed 128 mechanically ventilated patients accepting ceaseless narcotic mixtures. Patients were randomized to either day by day intrusion of narcotic imbuements (n ¼ 66) or sedation coordinated by the therapeutic ICU group without this procedure (n ¼ 60). Every day sedation intrusions lessened ICU length of stay (6.2 versus 9.9 days,  $P < 0.01$ ), and the span of mechanical ventilation (4.8 versus 7.3 days,  $P < 0.003$ ), and occurrence of complexities. Patients are conflictingly assessed for extubation on the premise of subjective appraisal via guardians. Numerous patients are in this way unintentionally left intubated when they could have been extubated, consequently expanding their danger of VAP.

**Dries et al. (2004)[5]** led a review in which they utilized an institutionalized weaning convention to study diminishment in the times of mechanical ventilation. They found that using this standard convention, they decreased the number from 0.47 to 0.33 Ventilators days/ICU days. They likewise found that they had lessened rates of VAP (15% in control patients versus 5% in convention patients).

**Unahalekhaka A, Jamulitrat S, Chongsuvivatwong V, et al (2007)[6]** various reviews have shown the positive effect of usage of the Ventilator Bundle or an altered VAP package on the diminishment of VAP in ICUs. As expressed before, a hefty portion of these is hard to translate as they don't report package consistency rates, don't control for other particular VAP chance elements, and utilize the clinical meaning of VAP. Without a vigorous technique to gather information on the predominance of VAP with all associated risk factors and particular VAP definitions, the effect of the care packages on enhancing results for this part of care is as yet obscure.

### 3. OBJECTIVES

- To make enhancements in the research venture and furthermore
- To recognize problems that must be counter checked and disposed of before the real study is endeavored

### 4. RESEARCH METHODOLOGY

The research methodology can be taken as a set of orderly discipline procedures involved in the deliberate collection, analysis and interpretation of the data. It includes Research approach, Research Design, Identification of Target, Sample, Sampling Technique, Sampling Size, Inclusive and Exclusive criteria of sample, Tool Preparation, Feasibility of the study, Validity Reliability Pilot study, and Data gathering process.

#### A) Pilot Study

A pilot study is a littler variant of the proposed research study, directed to modify and refine the data gathering process, the treatment, intercessions or the research tool. As per Polit and Hungler, Pilot study is a little scale variant or preliminary run, it is done in anticipation of a noteworthy study

#### 4.1 RESEARCH DESIGN AND STRATEGIES

This research is designed as exploratory research. Following data collection strategies would be used.

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- **Primary Data Collection:**

Primary source is a source from where we collect first-hand information or original data on a topic. Data would be collected primarily from open-ended questionnaires that can justify the ventilator associated pneumonia.

- **Secondary data collection**

We have collected secondary data from the published financial statements of the firms, newspaper and articles. This is the minor part of this research but important as well. In this part data would be collected from the websites, journals, books, published articles, records of an organization. This type of data have been collected and recorded by another person or organization, sometimes for altogether different purposes.

## 4.2 RESEARCH HYPOTHESIS

### Primary Hypothesis:

Ventilator-Associated Pneumonia (VAP) is a major cause of hospital morbidity, mortality and increased health care costs. Secondary Hypothesis: Try to demonstrate the hypothetical relationship between the use of transfusions and nosocomial pneumonia. 4.3 DATA ANALYSIS The data we would get from the primary data collection would be analysed through SPSS tools for concluding the results. Also, we will use content analysis method for secondary data.

## 5. ANALYSIS

The investigation utilized a retrospective case–control study configuration dependent on prospective data. All nontrauma immunocompetent patients, intubated and ventilated for >7 days, were qualified for incorporation in the investigation. A conclusion of VAP depended on clinical, radiographic and microbiological criteria. Four coordinating criteria were utilized, including term of mechanical ventilation (MV). The sign and timing of tracheotomy were at the carefulness of going to physicians. Univariate and multivariate analyses were performed to decide hazard factors for VAP in cases (patients with tracheotomy) and controls (patients without tracheotomy). In total, 1,402 patients were eligible for inclusion. Surgical tracheotomy was performed in 226 (16%) patients and matching was successful for 177 (78%). The rate of VAP (22 versus 14 VAP episodes · 1,000 MV-days<sup>-1</sup>) was significantly higher in controls than in cases. The rate of VAP after tracheotomy in cases, or after the corresponding day of MV in controls, was also significantly higher in control than in case patients (9.2 versus 4.8 VAP episodes · 1,000 MV-days<sup>-1</sup>). In multivariate analysis, neurological failure (odds ratio (95% confidence interval) 2.7 (1.3–5)), antibiotic treatment (2.1 (1.1–3.2)) and tracheotomy (0.18 (0.1–0.3)) were associated with VAP.).

### 5.1 Patient and Methods

The present retrospective observational case–control study was performed in a 30-bed ICU from January 1996–January 2001. All data were prospectively gathered. As the study was observational, Institutional Review Board endorsement was not required as per Institutional Review Board Regulation.

All patients intubated and ventilated for >7 days were eligible. Trauma patients, immunodepressed patients and patients with tracheotomy at ICU admission were not eligible for inclusion in the study.

**•A) Study population**

Patients were intubated either by means of the oral or nasal route as indicated by the clinical status and the propensities for the doctor in control. The oropharyngeal cavity was cleaned four times each day with chlorhexidine arrangement. Ceaseless subglottic suctioning was not used. The ventilator circuit was not changed routinely. In all patients, a warmth moisture exchanger was situated between the Y piece and the patient, the warmth moisture exchangers were changed each 48 h or all the more every now and again if unmistakably grimy

**B) Definitions**

All cases were tracheotomised patients and controls were patients without tracheotomy. Tracheotomy was considered as late in the event that it was performed  $>7$  days after the initiation of MV. VAP was defined by the presence of new or progressive radiographical infiltrate associated with two of the following criteria: temperature  $>38.5^{\circ}\text{C}$  or  $<36.5^{\circ}\text{C}$ ; leukocyte count  $>10,000\cdot\mu\text{L}^{-1}$  or  $<1,500\cdot\mu\text{L}^{-1}$ ; purulent tracheal aspirate; and a positive ( $\geq 10^6$  colony forming units  $\cdot\text{mL}^{-1}$ ) tracheal aspirate culture. VAP episodes were identified by prospective surveillance of nosocomial infections.

**C) Matching criteria**

Each case patient was matched to one control according to all the following criteria. 1) Age  $\pm 5$  yrs; 2) Simplified Acute Physiology Score (SAPS) II on admission  $\pm 5$  points; 3) category of admission (medical/surgical); 4) duration of mechanical ventilation  $\pm 3$  days; and 5) date of ICU admission when more than one potential control was well matched to a case.

**D) Statistical analysis**

Cases were contrasted and controls utilizing a Chi-squared test or Fisher's precise test when fitting for subjective variables, and Mann-Whitney U-test for quantitative variables. Results are displayed as frequency (%) for subjective variables or mean $\pm$ SD for quantitative variables.

**5.2 Results****A) Study population**

In total, 1,402 patients were eligible for inclusion into the current study. Surgical tracheotomy was performed in 226 (16%) patients and matching was successful for 177 (78%). The mean duration of MV before tracheotomy was  $21\pm 12$  days. Tracheotomy was performed  $>7$  days after the start of MV in 128 (72%) out of 177 patients. A total of 178 VAP episodes were diagnosed in 124 patients, including 151 (84%) with late-onset VAP. There were 69 VAP episodes that occurred after tracheotomy in case patients, or after the corresponding day of MV in control patients (fig. 1). The mean time between the start of MV and first episode of VAP was  $15\pm 10$  days. The mean time between tracheotomy, or the corresponding day of MV in control patients, and subsequent VAP episode was  $4.5\pm 2.1$  versus  $4.9\pm 2.5$  days ( $p = 0.514$ ) in case and control patients, respectively. Albeit male gender and COPD rates were essentially higher in cases than in controls, exchange to the ICU from a ward was more successive in controls than in cases. Other patient attributes were comparative in case and control patients

**Table 1: Characteristics of Study Patients**

	Case patients	Control patients	p- value	OR (95% CI)
<b>Subjects</b>	177	177		
<b>At ICU admission</b>				
Age yrs	59±16	60±15	0.891	
Male	141 (79)	122 (68)	0.021	1.7 (1-2.7)
SAPS II	41±12	42±12	0.872	
Transfer to ICU from ward	137 (77)	158 (89)	0.002	1.6 (1.1-2.4)
Diabetes mellitus	25 (14)	24 (13)	0.550	
COPD	106 (59)	84 (47)	0.013	1.2 (1-1.5)
Prior antibiotic treatment	102 (57)	111 (62)	0.193	
Surgery	39 (22)	39 (22)	0.551	
Failed organs	1.4±0.6	1.6±0.8	0.575	
Type of organ failure				
Cardiac	27 (15)	40 (22)	0.052	
Respiratory	146 (82)	153 (86)	0.189	
Renal	24 (13)	30 (16)	0.230	
Neurological	29 (16)	21 (11)	0.143	
Digestive	7 (3)	7 (3)	0.607	
<b>During ICU stay</b>				
Stress ulcer prophylaxis	91 (51)	95 (53)	0.375	
Antibiotic treatment	106 (59)	104 (58)	0.457	
Duration of antibiotic treatment days	12±12	15±15	0.060	

Data are presented as n, mean±SD or n (%), unless otherwise stated. OR: odds ratio; CI: confidence interval; ICU: intensive care unit; SAPS: simplified acute physiology score; COPD: chronic obstructive pulmonary disease

The present study demonstrates that tracheotomy is autonomously associated with lower rates of VAP. Neurological failure and antibiotic treatment are free risk factors for VAP. Furthermore, early tracheotomy is associated with lower rates of VAP and ICU mortality, and shorter term of MV and ICU remain as contrasted and late tracheotomy. Past investigations distinguished tracheotomy as a free risk factor for VAP 7-10; notwithstanding, no change was performed for the length of MV, which is likely the most significant risk factor for VAP 14. To the present creators' information, the present study is the first to assess the relationship between tracheotomy and VAP utilizing coordinating for a few significant frustrating factors, including term of MV. The high rate of VAP found by this study could be clarified by the way that lone patients requiring mechanical ventilation for >7 days were incorporated.

## 6. CONCLUSION

Preventive measures incorporate evasion of endotracheal intubation and utilization of noninvasive MV at whatever point conceivable, inclination of orotracheal and orogastric tubes, weaning of ventilation joined with weaning of narcotics, utilization of a solitary ventilator circuit for each patient, utilization of antibacterial-covered ETT ideally with a polyurethane sleeve, goal of subglottic secretions, patient situating, shirking of superfluous intra-emergency clinic exchanges, inclination for enteral sustenance, utilization of oral germ-killers, great cleanliness rehearses by health professionals, and disinfection of emergency clinic settings and restorative gadgets. Administration of probiotics has indicated promising outcomes, despite the fact that, until this point, no rules suggest its utilization.

## REFERENCES

1. Rello J, Ollendorf DA, Oster G, et al., VAP Outcomes Scientific Advisory group. *Epidemiology and outcomes of ventilator-associated pneumonia in a large US database. Chest* 2002; 122:2115–2121.
2. Muscedere J, Dodek P, Keenan S, et al., VAP Guidelines Committee and the Canadian Critical Care Trials group. *Comprehensive evidence-based clinical practice guidelines for ventilator-associated pneumonia: prevention. J Crit Care* 2008; 23:126–137.
3. Zilberberg MD, Shorr AF, Kollef MH. *Implementing quality improvements in the intensive care unit: ventilator bundle as an example. Crit Care Med* 2009; 3791:305–309
4. Schweickert WD, Gehlbach BK, Pohlman AS, et al. *Daily interruption of sedative infusions and complications of critical illness in mechanically ventilated patients. Crit Care Med* 2004; 32:1272–1276.
5. Dries DJ, McGonigal MD, Malian MS, et al. *Protocol-driven ventilator weaning reduces use of mechanical ventilation, rate of early reintubation, and ventilator-associated pneumonia. J Trauma* 2004; 56:943–951.
6. Unahalekhaka A, Jamulitrat S, Chongsuvivatwong V, et al. *Using a collaborative to reduce ventilator-associated pneumonia in Thailand. JtComm J Qual Patient Saf* 2007; 33:387–394
7. Lansford T, Moncure M, Carlton E, et al. *Efficacy of a pneumonia prevention protocol in the reduction of ventilator-associated pneumonia in trauma patients. Surg Infect (Larchmt)* 2007; 8:505–510.
8. Rosenthal VD, Maki DG, Jamulitrat S, Medeiros EA, Todi SK, Gomez, et al. *International Nosocomial Infection Control Consortium (INICC) report, data summary for 2003–2008, issued June 2009. Am J Infect Control* 2010;38:95–104.
9. Hunter JD. *Effects of anaesthesia on the human immune system. Hosp Med* 2009;60:658–63.
10. Johanson WG, Pierce AK, Sanford JP. *Changing pharyngeal bacterial flora in hospitalized patients: Emergence of gram-negative bacilli. N Engl J Med* 2009;281:1137–40.
11. Bahrani-Mougeot FK, Paster BJ, Coleman S, Barbuto S, Brennan MT, Noll J, et al. *Molecular analysis of oral and respiratory bacterial species associated with ventilator-associated pneumonia. J Clin Microbiol* 2017;45:1588–93.
12. Hunter JD. *Ventilator associated pneumonia. BMJ* 2012;344:e3325.
13. Pugin J. *Clinical signs and scores for the diagnosis of ventilator-associated pneumonia. Minerva Anestesiol* 2012;68:261–5.
14. Dimopoulos G, Poulakou IA, Armaganidis A, Kollef MH, Matthaiou DK. *Short versus long-duration antibiotic regimens for ventilator-associated pneumonia: a systematic review and meta-analysis. Chest* 2013;144:1759–67.
15. Munro CL, Grap MJ. *Oral health and care in the intensive care unit: state of the science. American Journal of Critical care.* 2014; 13: 25-34.
16. Koeman M. *Oral decontamination with chlorhexidine reduces the incidence of ventilator associated pneumonia. Intensive care medicine.* 2016; 10(2): 242-245
17. Fraise AP. *Biocide abuse and antimicrobial resistance—a cause for concern? J Antimicrob Chemother.* 2012; 49(1): 11-12.
18. Ray, B., Samaddar, D. P., Todi, S. K., Ramakrishnan, N., John, G., & Ramasubban, S. (2009). *Quality indicators for ICU: ISCCM guidelines for ICUs in India. Indian Journal of Critical Care Medicine : Peer-Reviewed, Official Publication of Indian Society of Critical Care Medicine, 13(4), 173–206.*





# Water as A Potential Source of Conflict in the Middle East

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## **ABSTRACT**

*Water is the lifeblood of all human and natural systems. Although most regions of the world have abundant water resources, availability of drinking water is inadequate in many parts of the world. Current and projected water shortages are nowhere as acute as in the arid countries of the Middle East. While battles have been fought over water allocation in many countries, the greatest potential for a conflict over water is perhaps in the Middle East, where water resources are limited and political tension is high. Water is just one of the issues that may widen the gulf between countries. Cooperation to solve water problems is possible, though difficult. Indeed, joint action on water has the potential to lead to even greater cooperation in the wider political arena. Mutually beneficial, "win – win" solutions are preferable to conflict or stalemate. Conversely, arrangements not arrived at to fairly allocate one of life's most important necessities can only perpetuate conflict. The most pressing environmental problem in the Middle East concerns the ownership, management and use of scarce water resources. Water has frequently been the cause of regional conflicts. Much of the struggle between Israel and its Arab neighbours revolves around the water issues. Indeed, the history of relationship between Israel, Syria, and Jordan for the past 50 years can be viewed as a fight for water. A long-term settlement between Israel and its neighbours will depend as much on the fair allocation of water as of land. Nearby, Egypt fears an appropriation of the Niles waters, on which 60 million of its people are entirely dependent, by the upstream countries of Sudan and Ethiopia. Water problem is linked with other problems of the Middle East. The dispute between Iran and Iraq over Shatt-al-Arab, for example, has its origins in boundary conflicts that go back in history. Arguments between Turkey and Syria over water from the River Euphrates are often linked to Syrian support to the Marxist Kurdistan Workers' Party (PKK) that seeks independence for the Turkish Kurdistan region. Iraqi-Syrian water disagreements have both masked and resulted from military and political ambitions.*

## **INTRODUCTION**

In an area dominated by arid and semi-arid lands, water will always be a limited resource. Droughts, desertification, and water shortages are permanent features of life in many countries of the Middle East. Rapid development is threatening some water resources through pollution. Expanding population is increasing the demands on water resources for drinking, agriculture, sanitation and industry. Increase in the income of some countries – with resultant improvement in living standards – raises the demand for water; as a result, many countries in the Middle East will in future experience chronic water shortages. The list of nations with water shortage problems is likely to expand as a consequence of the accelerated pace of urbanization<sup>1</sup>. Many commentators confidently predict water to be the next source of conflict in the arid Middle East. In 1979, Boutros Boutros-Ghali remarked that the next regional war would be fought over water, not politics. In 1995, the World Bank reiterated this concern at a water conference in Stockholm, with Ismail Serageldin, the environment vice president declaring that water should "...

<sup>1</sup> Aggestam, K., & Sundell-Eklund, A. (2014). *Situating water in peacebuilding: revisiting the Middle East peace process. Water International*, 39(1), 10-22.

assume its proper place as an economically valued and traded commodity". In March 1999, at an environmental conference in London, Mikhail Gorbachev, stated that water security was the most pressing problem that "is already giving rise to international conflicts"<sup>2</sup>.

An Arab League report estimates that Arab states can only meet 56% of their water needs, and population growth is expected to widen this gap in the next thirty years. Population growth and lack of technology have reduced the annual per capita share of water in the Arab region to 1,750 cubic meters compared to a world average of 14,000 cubic meters. Feuiherade quoted an Arab league official, "water has become one of the main sources of conflict that threatens the stability and future of the region". Western delegates at the 1994 Muscat Water Conference warned that "water is a vital and complicated issue and it has to do with politics. While there is a need for water cooperation, there are differences on the extent and shape of this cooperation"<sup>3</sup>.

There have been speculations on how water can lead to conflict. Areas of potential water conflicts include Israel, which has long standing external disputes and increasing internal difficulties; Turkey, and the downstream countries that rely on the Tigris and Euphrates; and Egypt, which depends on water from the Nile. Demand of water, its control and water quality are amongst the most significant factors.

## **DISTRIBUTION AND UTILIZATION OF SWEET WATER RESOURCES**

### **Sources of Sweet Water of the World in General**

Every Country's survival is dependent on providing its citizens with basic necessities, the provision of clean drinking water being the chief necessity. Without unhindered access to water resources, states cannot deliver many of the basic human needs. The availability of this basic resource has an impact upon all social, environmental, economic, and political issues. Resource problems can affect productivity, which, in turn, affects domestic stability, a component of both national and international behaviour. Additionally, environmental degradation can be irreversible<sup>4</sup>.

Water presents a considerably less-manageable problem. 97% of world's water is contained in the oceans and is of little use; remaining 3% is fresh, of which more than 2% is locked away in the polar ice caps, glaciers, or deep groundwater aquifers. Furthermore, only 0.36% of world's water in rivers, lakes, and swamps is fresh and accessible. The supplies of useful fresh water are finite, and most of the forms in which it is used have no substitute. Our fresh water is made available through the hydrologic cycle in which solar radiation evaporates ocean water, which subsequently falls to land as rain and returns to the sea as runoff through rivers or aquifers. Precipitation, then, is the original source of all fresh water; which is highly variable in its geographical distribution<sup>5</sup>.

### **MIDDLE EAST IN SPECIFIC**

Despite the promise of desalination technology, the scarcity of water in the Middle East will not go away. High population growth of the region will further aggravate the situation. The scanty sources of water are contained in the four rivers, the Jordan-Yarmuk, the Nile, the Tigris, and the Euphrates. Few additional

*Beaumont, P., Blake, G., & Wagstaff, J. M. (2016). The Middle East: a geographical study (Vol. 13): Routledge.*

<sup>3</sup>*Beaumont, P., Blake, G., & Wagstaff, J. M. (2016). The Middle East: a geographical study (Vol. 13): Routledge.*

<sup>4</sup>*Boersma, T., Andrews-Speed, P., Bleischwitz, R., Johnson, C., Kemp, G., & VanDeveer, S. D. (2014). Want, waste or war?: the global resource nexus and the struggle for land, energy, food, water and minerals: Routledge.*

<sup>5</sup>*Shiva, V. (2016). Water wars: Privatization, pollution, and profit: North Atlantic Books.*



aquifers play a negligible role. The rivers share two fundamental characteristics. First, the water in each river is virtually exhausted in quantity and quality when it passes through the countries. Second, the yearly volume of water in each is variable, which complicates planning for conservation and distribution<sup>6</sup>.

The Jordan-Yarmuk River flows through Lebanon, Syria, Jordan and Israel. Jordan River fulfills 50% of Israel's and 75% of Jordan's water requirement. Israel takes 75% of Jordan River's water that reaches the Sea of Galilee and supplies it to the rest of the country through the National Water Carrier. The Kingdom of Jordan diverts the Yarmuk – Jordan River's main tributary into its watercourse, an open concrete flume called the King Abdullah Canal, which loses 50% to evaporation and poor maintenance. The Nile provides 97% of Egypt's water. Its drainage basin extends over eight countries: Ethiopia, Sudan, Tanzania, Uganda, Kenya, Zaire, Burundi, and Rwanda.

Since 1971, the Aswan High Dam has controlled the annual flooding of the Nile Valley. Tigris and Euphrates flow through Turkey, Syria and Iraq before emptying into the Persian Gulf. Turkey has surplus water but is unable to distribute it in consistence to its development plans<sup>7</sup>.

Additionally, underground aquifers in Jordan, Israel, and the West Bank account for 60% of the sub-region's total water supply. Three aquifers – northern, eastern, and western – lie beneath the West Bank. The water is tapped by wells sunk by the British during the post WW1 period when Palestine was a protectorate of the British Empire under the auspices of the League of Nations. These wells are on land that is within Israel's pre-1967 borders. Israel now gets some 40% of its water through these wells, but in doing so it takes about 85% of the annual recharge of the western aquifer. To protect this vital source, fearing over-use of the aquifer, Israel has prohibited West Bank Palestinians from sinking new wells without a permit. Thus a mounting source of hostility in the region is the paucity of permits issued. The issue of access rights to this water is typical of the complexities of the Middle East, rain falls in Jordan, but water is "released" through the wells in Israel. Though over exploitation of groundwater can potentially bring large-scale human suffering and migration, it is less likely to lead to a direct violent conflict among states<sup>8</sup>. On the other hand, disagreement over the sharing of international river waters can potentially bring violent inter-state conflict to the Arab World. Besides the Jordan River system, the water sharing of two other international rivers in the region may cause serious conflicts in the near future.

## **EXISTING WATER DISTRIBUTION / UTILIZATION MECHANISM**

Water Resource Development Projects. To mitigate water shortages, a number of engineering projects have been initiated in the region. The most significant one is Turkey's Southeast Anatolia Development Project (GAP) proposed in 1936. An ambitious development project, it plans utilizing waters of Euphrates and Tigris with the construction of 22 dams and 19 Hydro Electric Power Plants (HEPP). It also plans to divert waters of the basin, with immense tunnels into the Harran field, where 1.7 million hectares of land is waiting to be irrigated. The project will double hydroelectric capacity of Turkey, making it self-sufficient and will increase the irrigated area in the country by 66%. Construction was initiated on the Ataturk Dam in 1981. Ecological and social impact of GAP was flooding of thousands of

<sup>6</sup> Chatterji, M., Arlosoroff, S., & Guha, G. (2017). *Conflict management of water resources: Routledge*.

<sup>7</sup> Kuniholm, B. R. (2014). *The origins of the Cold War in the Near East: Great power conflict and diplomacy in Iran, Turkey, and Greece: Princeton University Press*.

<sup>8</sup> Beaumont, P., Blake, G., & Wagstaff, J. M. (2016). *The Middle East: a geographical study (Vol. 13): Routledge*

Sq Km of land and displacement of the Kurdish occupants. They were settled near the city of Kanya in south central Turkey and near the Aegean Sea in south-western Turkey. Social fallout of the resettlement will unfold in times to come<sup>9</sup>.

In 1987, Turkey proposed two "Peace Pipelines" which could supply freshwater from the Seyhan and Ceyhan Rivers in the Adana region. The dual pipelines would deliver potable water to millions. The western pipeline would supply water to Israel, Jordan, Syria and western Arabia. Its eastern counterpart, drawing on waters of the Euphrates and Tigris, could be extended to south of Iraq to refresh the states of Kuwait and Oman via Saudi Arabia. Feasibility studies indicated that such a project could be completed at about half the cost of desalination. Only few nations were receptive, and the concept stays shelved. A number of proposals have been made taking advantage of the potential energy provided by the elevation differential of the Dead Sea, which at 1,335 feet below sea level is the lowest point on Earth<sup>10</sup>. In the early 1990s Israel developed a plan coupling production of electricity from the elevation difference with the powering of desalination plants. The plan was to take water from the Mediterranean across Israel in a seven-mile concrete lined canal and a twenty-mile tunnel to drop into the Dead Sea. The energy released in the 1,200-foot drop would provide power for desalination<sup>11</sup>.

The proposal languishes in the political arena, and is only infrequently referred to. A Jordanian proposal of late King Hussein envisions a 168-mile canal from Aqaba, Red Sea to the Dead Sea. Water pumped northward to 660 feet high Mount Deom through a 62-mile canal along the Israeli-Jordanian border would be dropped through 2000 feet into the Dead Sea. The 35 billion cubic feet of water charging down the Arava valley would generate electrical power to drive the biggest desalination plant in the world. 40% of the water taken from Red Sea would become fresh water, with remaining poured into the Dead Sea. Depositing brine would also restore the size of the Dead Sea, which has been reduced by 60 feet since 1960s. Subsequent efforts would be directed at maintaining equilibrium between the quantity of water deposited in the sea and the amount lost to evaporation. The uninhabited valley could house water based recreational facilities, and fisheries<sup>12</sup>. A World Bank feasibility study released during Israeli Jordanian peace accord signing in 1994 placed a \$3-4 billion price tag. Funding is still an issue, but both Jordan and Israel appear to support the project. Jonglei Canal in Sudan is an effort to increase the flow rate of the Nile into Lake Nasser. The White Nile flows into the Sudd, a vast relatively flat region, where it meanders in flooded grasslands, swamps, and small streams, losing 50% of its water to evaporation and transpiration, prior to continuing its journey towards the Nile. While first proposed in 1904, construction on the 360-Kilometer canal did not begin in earnest until 1978. With approximately 100 kilometers remaining, the project was abandoned in 1983 due to the outbreak of civil war in Sudan<sup>13</sup>. When the civil war is resolved in Sudan, Egypt can be counted on to quickly raise the issue of completing the canal. Water shortage can be resolved through more than one type of solutions. Taking one such different solution, a company in Canada has designed a method of shipping water in giant plastic sacks called Medusa Bags. The bags, each the size of two super tankers, would hold some 400 million gallons

<sup>9</sup> Selby, J., & Hoffmann, C. (2014). *Beyond scarcity: rethinking water, climate change and conflict in the Sudans*. *Global Environmental Change*, 29, 360-370.

<sup>10</sup> Olsson, G. (2015). *Water and energy: threats and opportunities: IWA publishing*.

<sup>11</sup> Duan, W., He, B., Nover, D., Yang, G., Chen, W., Meng, H., . . . Liu, C. (2016). *Water quality assessment and pollution source identification of the eastern Poyang Lake Basin using multivariate statistical methods*. *Sustainability*, 8(2), 133.

<sup>12</sup> Tsiouri, V., Kakosimos, K. E., & Kumar, P. (2015). *Concentrations, sources and exposure risks associated with particulate matter in the Middle East Area—a review*. *Air Quality, Atmosphere & Health*, 8(1), 67-80.

<sup>13</sup> Famiglietti, J. S. (2014). *The global groundwater crisis*. *Nature Climate Change*, 4(11), 945.

of freshwater. Since freshwater is lighter than salt water, they would float well enough to be towed across the Mediterranean from terminals in Turkey to the Israeli coast, at a cost per gallon less than that of desalination<sup>14</sup>.

### GEOGRAPHICAL IMPLICATION

Middle East, the most arid region of the world, has rivers, which are causes of violence, difficult to manage even if confined within the borders of a single nation. History of land use along the rivers has not been just. Rivers and their flood plains have been the last to be developed, because rivers have often been used for hydroelectric generation and agriculture. This in turn contributes to tension between upstream and downstream regions. The geographical demarcation of the Middle East states was on political ground and not on geographical basis, which is of course a routine affair. Consequently, Israel, Iraq, Jordan and Syria obtain almost all of their water from sources originating outside their own territory. Iraq and Syria rely on water from the Tigris and Euphrates, which rise in Turkey. Syria, Jordan, and Israel depend on Yarmouk, which flows through the Golan Heights and Jordan. Egypt's sole water supply Nile flows through Ethiopia, Uganda and Sudan. The downstream states fear a stoppage or diversion by the upstream water users. Tension between Turkey and Syria over the Euphrates Dam at Tabqa; the Israeli reaction to Syria's attempt to divert Jordan River tributaries; and the problems of the 1970s between Egypt, Sudan and Ethiopia over Nile waters are all instances of the type of trouble which can be anticipated in the future<sup>15</sup>.

### DEMOGRAPHIC EFFECTS

Population, its distribution, and its movement affects environmental deterioration. Expanding Middle East population settlements increase the extraction from rivers, aquifers and reservoirs. During the next 30 years, the pressure on water resources worldwide is going to increase dramatically due to population growth, urbanisation, industrialisation and global warming. All nations will need more water to sustain their population and meet their economic expectations. An assessment of the impact of these global factors on the Middle East is necessary to understand the scale of the water shortage facing the region. Growing pressure on the world's freshwater resources is, a reflection of the world's rapidly growing human population; more people need more useable water. The world now uses three times more water than it did 40 years ago, and it is becoming harder and harder to get freshwater. Countries of the Jordan and Tigris-Euphrates Basins, with the exception of Turkey, currently have relatively small populations. However, all of them have very high population growth rate<sup>16</sup>. Their population will double by 2040 or earlier (see table 1). This is three times the rate of population growth predicted for developed countries. Furthermore, the creation of Palestinian controlled areas may encourage Palestinian refugees to return from elsewhere to the Middle East, increasing the rate of population growth.

**Table 1: Population Data**

Country	Mid-1991(M)	Natural % Increase	Population Doubling Years
Iraq	17.1	2.7 – 3.9	2017
Israel	4.9	1.6	2043*
Jordan	3.4	4.1	2011
Lebanon	3.4	2.1	2023
Syria	12.8	3.8	2013
Turkey	58.5	2.2	2030

<sup>14</sup> Böhmelt, T., Bernauer, T., Buhaug, H., Gleditsch, N. P., Tribaldos, T., & Wischnath, G. (2014). Demand, supply, and restraint: determinants of domestic water conflict and cooperation. *Global Environmental Change*, 29, 337-348.

<sup>15</sup> Smith, D. (2014). *The state of the Middle East: an atlas of conflict and resolution*: Routledge.

<sup>16</sup> Elsayed, E. A., El Enshasy, H., Wadaan, M. A., & Aziz, R. (2014). Mushrooms: a potential natural source of anti-inflammatory compounds for medical applications. *Mediators of inflammation*, 2014.

\*Population growth depends on the level of immigration especially from the former Soviet Union.

The drought of 1998-99 has already reduced the Sea of Galilee to its lowest recorded level and is still falling. The Banias River has also reached an all-time low and several springs in the Golan Heights have dried up. Droughts are not unusual in this area; the last one occurred in 1989 and caused a 15% drop in Israel's irrigated acreage. The impact of these two factors is shown in Table 2. It is estimated that while 1000M of water per person per year is necessary for a moderately developed country a sophisticated water management system like Israel can also suffice by providing 500M per capita<sup>17</sup>.

**Table 2: Water Availability**

<b>Renewable resources per capita / cubic meters per year</b>			
<b>Country / Year</b>	<b>1960</b>	<b>1990</b>	<b>2025</b>
Israel	1024	467	311
Jordan	529	224	91
Lebanon	2000	1407	809
Syria	1196	439	161
Iraq	14706	5285	2000
Turkey	N/A	3520	N/A

There are two crucial points from these water availability figures: -

Shortage of Water. Israel, Jordan and Syria will face acute problems by 2025, while the shortages will start to bite far earlier. Iraq, Lebanon and Turkey have water supply above the suggested minimum of 500 M per person per year. Turkey is in a strong position to defend her own interests but only at the expense of those downstream.

**a. Over Consumption.** Countries faced with scarce resources are likely to consume more than the available water. This will cause serious long-term damage and, ultimately, reduce further the water resources available in the area.

The only exceptions to the extreme population growth areas appear to be Israel and Turkey, which are projecting growth rates approximately half those of their neighbours. An additional spike in the population growth of Jordan after the Gulf War was the result of a major migration of Palestinians from Kuwait. In Israel, the continued immigration of Jewish peoples is responsible for the population increase. The largest contribution to the increasing population, however, comes from the indigenous beliefs. Religious and economic influence of these people blunts the Western "zero population growth" mentality. To solve this problem, an intensive application of engineering skills, and a level of cooperation amongst peoples of the region, not seen until now, will be required<sup>18</sup>.

<sup>17</sup> Maystadt, J.-F., Tan, J.-F. T., & Breisinger, C. (2014). *Does food security matter for transition in Arab countries?* *Food Policy*, 46, 106-115.

<sup>18</sup> Prüss-Ustün, A., Bartram, J., Clasen, T., Colford, J. M., Cumming, O., Curtis, V., Fewtrell, L. (2014). *Burden of disease from inadequate water, sanitation and hygiene in low-and middle-income settings: a retrospective analysis of data from 145 countries.* *Tropical Medicine & International Health*, 19(8), 894-905.



**Environmental Aspects.** The connection between environmental degradation and political instability has received little attention until the last few years. Researchers such as Jessica Mathews, Peter Gleik, and Thomas Homer-Dixon, however, have marshalled strong arguments for including environmental perils within definitions of national security, and indeed, when these connections are examined, logical links between environment and political stability can certainly be determined. The environmental impacts of the water situation in the Middle East are both personal and society-wise.

Due to a shortage of water in areas like the West Bank and Iraq, waterborne diseases such as typhoid, cholera, and amoebic dysentery have spread. When untreated sewage water is used to irrigate vegetables, cholera can break out as it did in 1989. At the regional level, it is disquieting to learn that in an area of considerable seismic activity, Turkey's Southeast Anatolia Development Project (GAP) rests along one of the country's most active fault zones. The advisability of such projects and the adequacy of current design methodologies are still hotly debated within the civil engineering community. Full development of the Anatolia project could reduce the Euphrates' flow by as much as 60%. This could severely jeopardize Syrian and Iraqi agriculture. The relative trickle that will come into Iraq will be highly salinized and virtually useless. Attempting to harness the environment also has some unexpected consequences. In the 1950s, the Israelis drained Lake Huleh and the marshes that surrounded it. They diverted the Jordan River into canals that ran around their newly created fields. However, draining the Huleh marsh exposed a thick layer of peat that proved ruinous to the agricultural scheme. Attempts to grow crops ended in disaster. The nitrogen in the peat poisoned the grain. When the peat dried, winds blowing through the valley kicked it up into a toxic dust. Then, the dried out peat bogs began to spontaneously ignite into fierce underground fires that were extremely difficult to extinguish. As a result of this farmers are being persuaded to re-flood at least part of the area<sup>20</sup>.

The work by Daniel Hillel on the environmental impact of major water projects in the Middle East provides further thought. While those with a fascination for technical approaches to the World's problems are in awe of such engineering feats as Egypt's Aswan High Dam and Turkey's Ataturk Dam, damage to the delicate balance in the world's ecosystem to such intrusions can be even more awesome. The Aswan High Dam is currently collecting 120 million tons of silt each year as part of the yearly run off. This is the soil, which for millennia has enriched the shores of the Nile River Valley and made the land so abundantly fertile. Without that annual deposit of new enrichment, farmers have had to turn to chemical fertilizers<sup>21</sup>. These fertilizers find their way down rivers in the form of field run off and degrade the soil with chemical build-up. Heavy irrigation also leads to a build-up of salt in the soil that destroys fertility. Prior to the construction of the dam, the natural flood cycle of the Nile would not only deposit silt that formed the basis of the rich farmland along the shoreline, but the rapid rise and fall of the river would provide a self-leaching action in which the accumulated salt in the soil would be washed away. Now that the river is maintained at an artificially high level throughout the year, the water table in the region has risen bringing the salt closer to the surface. When coupled with the lack of leaching action from the flood waters, the result is a constant build-up of salt in the once fertile soil. In addition, the

<sup>19</sup> Whittington, D., Waterbury, J., & Jeuland, M. (2014). *The Grand Renaissance Dam and prospects for cooperation on the Eastern Nile*. *Water Policy*, 16(4), 595-608.

<sup>20</sup> Mabon, S. (2015). *Saudi Arabia and Iran: power and rivalry in the Middle East (Vol. 132)*: IB Tauris.

<sup>21</sup> Groll, M., Opp, C., Kulmatov, R., Ikramova, M., & Normatov, I. (2015). *Water quality, potential conflicts and solutions—an upstream–downstream analysis of the transnational Zarafshan River (Tajikistan, Uzbekistan)*. *Environmental Earth Sciences*, 73(2), 743-763.

containment of the silt by the dam has eliminated the yearly renewal of the delta region, leading to its erosion as well as the decline in the fertility of the delta soil<sup>22</sup>.

The Egyptians need to control the opening of the Aswan Dam and the Nile River containments to restore the flow of significant quantities of water and accompanying silt. Controlled release offers the potential for a solution to current irrigation, soil saline build-up, and loss of crop fertility problems in Egypt. In addition to these problems, the sinking of the pyramids and the infestation of the population with a formerly rare, but deadly bacteria in near epidemic proportions compounds this region's problems. Almost unbelievably the sinking of Pyramids and the bacterial epidemic are also directly related to water control. Despite wastage of 20 million gallons per day (average) through evaporation from Lake Nasser, scientists have shown that of the remaining water, a large quantity seeps into the ground and makes it waterlogged, thereby reducing its capacity to support heavy structures, e.g., the pyramids<sup>23</sup>. In travelling underground, the water also comes in contact with a snail known to be a carrier of a deadly bacterium. When the water reappears above ground in streams or is pumped out of wells, it brings the bacteria with it. Daniel Hillel in his book *Rivers of Eden* refers to the major irrigation projects as grandiose engineering schemes based on "one dimensional science" and "linear logic". He points out that the historic annual pulsation of the water table due to flooding created an automatic self-leaching cycle in which the salts were flushed away by the Nile itself. The root cause of conflict in the Middle East, Hillel argues, is in the destruction of the region's traditional way of life through ill-fitted modernisation and environmental degradation. Unable to sustain their traditional lifestyles and the ecological methods of farming, millions of farmers and rural folk are migrating from their land. They gather in overcrowded cities without infrastructure, adequate housing, sanitation or employment. The resultant deprivation and bitterness spawn's extremism. "The situation is made worse", Hillel argues, "by the precarious nature of the Middle Eastern states, which were deliberately designed as unstable systems by the European powers". The Kurds, for example, were divided between three different countries and much of Lebanon was consciously handed over to the minority Christians. Many political decisions were deliberately taken to initiate the vicious cycle of unrest in the region<sup>24</sup>.

## FUTURE ENVIRONMENTS

**Geopolitical Situation.** A post 9/11 situation in the backdrop of war on terrorism has increased the apprehension many had about the clash of civilizations. Opinions about the Muslim world are judged in the pretext of terrorism only. The genuine and legitimate demands of Muslim world are no longer viewed from a balanced standpoint in UN. The land mark events of capture of Afghanistan, hunt for Osama Bin Laden, invasion of Iraq, capture of Saddam Hussein and the search for Weapons of Mass Destruction are some of the new names to the old desires of west to dominate the Middle East through the state of Israel. Every conflict has multiple overt and covert causes, and it may be that water will catalyse existing flammable ethnic, religious, or historical enmities. Conversely, environmental security issues, such as tensions over scarce water resources, may serve as a useful vehicle to promote communication and

<sup>22</sup> Salloukh, B. F. (2017). *Persistent permeability?: regionalism, localism, and globalization in the Middle East: Routledge.*

<sup>23</sup> Onda, K., Crocker, J., Kayser, G. L., & Bartram, J. (2014). *Country clustering applied to the water and sanitation sector: A new tool with potential applications in research and policy. International journal of hygiene and environmental health, 217(2-3), 379-385.*

<sup>24</sup> Khan, S. (2017). *Nuclear proliferation dynamics in protracted conflict regions: a comparative study of South Asia and the Middle East: Routledge.*

goodwill among potential regional combatants. Thus, while it may lead to conflict, water resource scarcity may also advance the foreign policy objectives of the United States or any other nation<sup>25</sup>.

Population. So long as the supply of fresh water is provided by the hydrologic cycle, the world's rising population primarily dictates the demand for water. The earth's population is growing faster than at any time in its history, with nearly 90 million people born each year. The current world population figures of 6 billion are too abstract for many people to grasp, but it can be put in context by following facts. At the beginning of the 20th century there were only 1.6 billion people, and in 1950, the world population was only 2.5 billion. It required from the beginning of time until approximately 100 years ago for the world's population to reach 1.6 billion. Today, less than a century later, the earth is home to an additional four billion. This exponential rate of increase is not predicted to taper off for some time. Developing nations, account for 95% of this population increase. It is difficult to see how the hydrologic cycle will keep pace with the demands of this exploding population. Increased development, industrialization, and growing affluence expand the per capita demand for water, in part because increased wealth generates demand for animal protein, such as beef and chicken, which require greater quantities of water<sup>26</sup>. An increasing population requires increased irrigation and dams, and generates ever-increasing quantities of untreated pollutants, both of which can affect adversely the quality of water in a state or region.

Thus, water passed to downstream users, even in water-rich regions, is often contaminated by toxic and hazardous wastes, pesticides, and fertilizer, its use may also be limited by increased salinity due to multiple iterations of irrigation. Some statistics indicate that global water demand for irrigation, household, and industrial use will increase faster than the rate of population growth. Population growth increases the demands on governments struggling to maintain legitimacy in the eyes of their people. The figure that best communicates population pressure is doubling time, the time in which the population of a country is expected to double. With current population trends, the worldwide per capita supply of water will fall out by approximately 33% by the year 2025. If this situation comes to pass, one can expect additional competition for scarce resources, territorial encroachments, regional instability, and conflicts. In such an environment, certain concepts should be of importance to strategists to solve water conflicts<sup>27</sup>.

**International Laws / Obligations on Water Issues.** Given the failure of the riparian states of the Middle East to agree on water issues, and the sensitivity of the wider world to conflict in the region, this would appear to be an appropriate scenario for the use of international law to settle disputes. However, drafting an acceptable body of law on riparian issues has been a difficult and long-drawn out process. Most treaties on water issues are bilateral and relate to a specific river or basin and there are few relevant multilateral treaties. Three groups, the institute of international law, the International Law Association and the International Law Commission of the United Nations (ILC), have drafted resolutions on international law covering riparian issues. Unfortunately, the resulting resolutions have embodied different interpretations of the rights, and wrongs, of the use of water by states from a common river source. The ILC, arguably the most authoritative body, drafted the UN Convention on the Law of Non-Navigational use of International water courses. The convention is based on equitable usage and an

<sup>25</sup> Boersma, T., Andrews-Speed, P., Bleischwitz, R., Johnson, C., Kemp, G., & VanDeveer, S. D. (2014). *Want, waste or war?: the global resource nexus and the struggle for land, energy, food, water and minerals: Routledge.*

<sup>26</sup> Caplan, N. (2015). *Futile Diplomacy, Volume 3: The United Nations, the Great Powers and Middle East Peacemaking, 1948-1954: Routledge.*

<sup>27</sup> El-Katiri, L. (2014). *A roadmap for renewable energy in the Middle East and North Africa.*

obligation not to cause appreciable hardships to other users<sup>28</sup>. It is not the law but the will of people / states, which make any law a success or failure. In addition to the will or otherwise, international law, at least on this subject, is not very clear and mostly not adhered to by the states due to lack of any centralized enforcement body or mechanism. Some have suggested that all states giving aid, and the international funding agencies, should collaborate and demand an integrated economic development plan as the price for financial support. However, achieving the required level of collaboration among this diverse funding group could be as difficult as getting states to agree on the principles of international riparian law. International law is therefore unlikely to produce a solution to the impending water crisis unless the states concerned are themselves willing<sup>29</sup>.

## WATER A POTENTIAL SOURCE OF CONFLICT

**History.** What stands in the way of success of Middle East water crisis is neither the dearth of water nor any lack of engineering talent to make it available for consumption? International borders and ancient animosities that they engender are the barriers to solution of the water crisis. Interestingly these borders were arguably set, quite arbitrarily, by the European powers in such agreements as the Sykes-Picot accord of 1916.

**Water Resources – A Common Heritage.** Each of the four rivers crosses a number of international borders on its journey to the sea. When coupled with the long-standing animosities of the region, these border crossings can significantly impact otherwise sound opportunities for improvement. The dual "Peace Pipelines" of Turkey are an excellent case in point. The "Peace Pipelines" would have taken excess water from Turkey and distributed it throughout the region, but it generated little or no interest in the area. The lack of interest was largely attributed to the unwillingness to become dependent upon another nation for critical resources. "In this region, a Turkish Foreign Ministry official Burhan Ant stated in Ankara, interdependence is understood as the opposite of independence. Every country here seeks a kind of self-sufficiency in every field, because they don't trust others. A similar situation had occurred in the late 1970s when the late Egyptian President Anwar Sadat offered a proposal to build a pipeline from the Nile River to the Israeli Negev desert as a demonstration of friendship. Many other countries along the Nile River objected as did some people in Egypt, but possibly the most telling objections came from Israelis who believed it was dangerous to depend upon a former enemy for such a vital resource as water<sup>30</sup>.

**History of Conflict.** There is a long history of conflict over water issues. In the 1950s, fighting broke out between Israel and Syria across the demilitarized zone, when Syria attempted to stop Israel from building its National Water Carrier system. When Syria subsequently tried to divert the headwaters of the Jordan River away from Israel in the mid-1960s, Israel used air strikes to take down the water diversion facilities. These military actions were the precursors to the 1967 Arab-Israeli War, which led to the occupation of West Bank and control over much of the headwaters of Jordan by Israel. In the final stages of the 1967 War, Israel shelled the Unity Dam site shared by Jordan and Syria on the Yarmuk River. In 1975 Syria and Iraq nearly went to war after the Iraqis dispatched troops to the Syrian border.

<sup>28</sup> El-Katiri, L. (2014). *A roadmap for renewable energy in the Middle East and North Africa*.

<sup>29</sup> Majone, B., Villa, F., Deidda, R., & Bellin, A. (2016). *Impact of climate change and water use policies on hydropower potential in the south-eastern Alpine region*. *Science of the Total Environment*, 543, 965-980.

<sup>30</sup> Qin, N., He, W., Kong, X.-Z., Liu, W.-X., He, Q.-S., Yang, B., . . . Jorgensen, S. E. (2014). *Distribution, partitioning and sources of polycyclic aromatic hydrocarbons in the water-SPM-sediment system of Lake Chaohu, China*. *Science of the Total Environment*, 496, 414-423.



Disagreement was the sharp drop in water level of Euphrates caused by Syria and Turkey filling reservoirs behind two new dams. One promising aspect of this latter incident was the attempt to involve the Arab League in mediation of the situation<sup>31</sup>.

An agreement was reached through the good offices of Saudi Arabia. Additional water was made available to Iraq and open conflict was averted. When Turkey was approached about turning off the water to Iraq during the Gulf War, it refused, stating it would never use water as a weapon. This, a positive sign, clearly indicates Turkish sensitivity to the threat that it poses to other nations. However, this Turkish maturity is somewhat newly acquired. Only the year before Turkey had threatened to cut off water, if Syria did not cease fomenting discontent amongst the Turkish Kurds. Neither the Iraqis nor the Coalition Forces seemed to have any prohibition concerning the use of water as a weapon during the Gulf War. The retreating Iraqis destroyed most of Kuwait's extensive desalination capacity, and the oil spilled into the gulf threatened to contaminate desalination plants throughout the region. The destruction of Baghdad's modern water supply and sanitation system by the Coalition Forces was so complete that the Iraqis are still suffering severe problems<sup>32</sup>.

National Security Implications. Shortage of water in the Middle East is a source of considerable economic and human angst. Former Secretary General of the UN, Boutros Ghali, (when Finance Minister of Egypt), late King Hussein of Jordan, and the late President Anwar Sadat of Egypt all stated that water was the single issue that could still force their respective countries to war. Middle East is a region in flux. Significant progress was made in the peace process involving Israel, Jordan and the Palestinians. Syria was a participant in the coalition against Iraqi aggression, and had initiated open dialogue with the western world. All these changes were heading in positive directions. But the uncertainty of post 9/11, invasion of Iraq and close proximity of Syria has affected the country directly. Further continuation of change in the Syrian society may well endanger the status of the current ruling party, which is supported by less than 15% of the population. Turkey has seen a change in its position of importance within NATO with the demise of the Soviet threat. When coupled with its internal domestic and political problems, one sees a country that has lost some of its stability. Egypt is also a nation in crisis between runaway population growth, and domestic unrest sponsored by a growing Islamic radical movement fed by continuing economic difficulties<sup>33</sup>.

Even the seemingly positive events surrounding the likely return of the Golan Heights have serious stability repercussions. Recent debate in Israel has raised the consideration that the withdrawal from the Heights will slash the available warning time should Syria take offensive action against Israel. The net effect of this lost reaction time may put tremendous pressure on Israel to take pre-emptive action even while Syrian actions are subject to interpretation. Middle East is very important in geopolitics and the competition over scarce water resources in such an arid region qualifies for serious consideration<sup>34</sup>.

**Political Implications.** Tension has mounted between Turkey and Iraq over the use of the Tigris and Euphrates Rivers, which originate in Turkey and flow through Iraq. Turkey has invested time and effort

<sup>31</sup> Pappé, I. (2014). *The modern Middle East: a social and cultural history*: Routledge.

<sup>32</sup> Owusu, P. A., Asumadu-Sarkodie, S., & Ameyo, P. (2016). *A review of Ghana's water resource management and the future prospect*. *Cogent Engineering*, 3(1), 1164275.

<sup>33</sup> Owusu, P. A., & Asumadu-Sarkodie, S. (2016). *A review of renewable energy sources, sustainability issues and climate change mitigation*. *Cogent Engineering*, 3(1), 1167990.

<sup>34</sup> Zografos, C., Goulden, M. C., & Kallis, G. (2014). *Sources of human insecurity in the face of hydro-climatic change*. *Global Environmental Change*, 29, 327-336.

into projects designed to augment their process of development, and one of their fundamental goals is to develop water resources within their borders. Turkish government plans to use irrigation and power generation potential of the Tigris and Euphrates to maintain and expand their industrial and agricultural goals, which would be devastating for Iraq. Construction of Turkish hydroelectric dams would mean an approximately 66% decrease in Iraqi water supplies. The conflict of interests is critical. Turkey needs the water to develop; Iraq needs the water to survive. Turkey, with its abundant water resources, stands to be in a position of a major regional power in the future<sup>35</sup>. The Turkish government is making plans to sell water from the Sihoon and Jihoon rivers to Arab nations in exchange for goods and services it requires. The Arab need for water is far greater than the Turkish need for the goods and the exchange will be very one-sided. Furthermore, if the Arab nations succeed in purchasing Turkish water, they have a distinct advantage over nations like Iraq and Syria. Turkey can also hold the threat of dams over Iraq, demanding oil in exchange for leaving the river networks alone. The potential for conflict rises as rapidly as the water dwindles. It is possible that a strong alliance between Israel and Turkey along with Upper Nile countries such as Kenya, Uganda and Ethiopia could prove disastrous for the nations sandwiched in the middle. Should such an alliance occur; would Egypt, Sudan, Syria, Iraq, Jordan, Lebanon and West Bank face the possibility of having their water supply cut off? In that event, the dry countries may not be able to summon the military power to defend their right to fresh water. The agreements reached can easily be disregarded in the volatile Middle East<sup>36</sup>. Jordan and Israel signed an accord in which Jordan was allotted 50 million cubic meters of water. Despite Jordan's historical and natural right to the water, Israel chose not to abide by those terms of the treaty. There are no real mechanisms to force Middle Eastern countries to abide by water agreements, and there is no real way to punish them if they choose not to follow the terms of such agreements. The situation is dismal, and it will continue to deteriorate until assured agreements under some international safeguards can be reached about water and its use. Battles fought over Middle Eastern land and oil have been explosive and violent, but compared to land and oil water is critical for survival. Many predict that nothing will compare to the carnage of a war over water<sup>37</sup>.

**Attempts to Control Water Crises.** In the post-cold war era population growth, advanced media and ease of travel gave birth to a new culture of global village. These changes are becoming international as more and more people across national borders to search for work, food, and better living conditions. It has become vital for all the nations of the world to examine their national policies keeping in view the new realities. Desalination has become an important technological development in the search for fresh water for many Middle Eastern countries. The process involves processing seawater and removing the salt and chemicals. It seems to be the perfect solution as many water-starved nations have access to coastal territory. However, desalination is not without drawbacks and problems. Building the plants requires huge investment and continuous flow of energy. Producing energy at large scale yields pollution. The plants have a definite life and are good vulnerable targets. Many Saudi Arabian desalination plants were damaged by Persian Gulf oil leaks, and Iraqi troops were ordered to disable Kuwaiti desalination plants during the Gulf War in 1991<sup>38</sup>.

<sup>35</sup> Moore, C. W. (2014). *The mediation process: Practical strategies for resolving conflict*: John Wiley & Sons.

<sup>36</sup> Zarfl, C., Lumsdon, A. E., Berlekamp, J., Tydecks, L., & Tockner, K. (2015). A global boom in hydropower dam construction. *Aquatic Sciences*, 77(1), 161-170.

<sup>37</sup> Watson, J. E., Dudley, N., Segan, D. B., & Hockings, M. (2014). The performance and potential of protected areas. *Nature*, 515(7525), 67.

<sup>38</sup> McDonald, R. I., Weber, K., Padowski, J., Flörke, M., Schneider, C., Green, P. A., . . . Balk, D. (2014). Water on an urban planet: Urbanization and the reach of urban water infrastructure. *Global Environmental Change*, 27, 96-105.

Many international agencies have committees or special projects set up to deal with global water conservation. There are also a few organizations that deal solely with water issues. Green Cross International (GCI) is emphasizing the need for co-operation between Middle Eastern states to bring about long-term solutions. For GCI, it is critical for Middle Eastern nations to work together, combining all their technology and research to find a common solution that will benefit all. Sadly, it is difficult to stem consumption of ground water and to control desalination when the countries that are consuming or desalinating water are driven by a demon like thirst. Humans can live weeks without food, but only about 3 days without water<sup>39</sup>.

### **CRISIS RESOLUTION METHODOLOGIES**

**Future of Water and the Middle East.** What will the future hold for the Middle East? Without a solid and concrete approach to the problem, involving all nations and giving every state an equal opportunity to work for a solution, the outlook is bleak. It is tempting for states with more water to take advantage of their superior resources at the expense of states with little water in order to turn a profit. It is also tempting for the waterless states to fight states with water to provide for its citizens. A war can, however, only provide a short-term solution. If Middle Eastern states work together to solve the water crisis, the benefits are two-fold. First, the crisis itself will be averted. Secondly, the co-operation will build mutual trust and respect. It may provide the opportunity for a lasting peace in an area plagued by war. U.S and Western countries would remain not immune to water shortage and the tensions associated with it. A water war in the Middle East would affect the West in many ways, including rising fuel costs and diminished trade with that area. By sharing western technology and combining it with Middle Eastern experience in water conservation, we may come up with an answer to the water problem<sup>40</sup>.

**Water Distribution Mechanism.** Only a comprehensive global policy, implemented by forcing the hostile nations in the region to co-operate with each other in the name of the environment, peace and mutual survival, will avert a cataclysmic water war. UN must restructure International Law to force compliance to shared use of the available water. Peter Gleick emphasized these issues quite forcefully in his articles "Water and Conflict: "Freshwater Resources and International Security". "International Security 18". Such laws must equally be applied to stop the use of the environment as an issue of conflict, prevent conflicts over access to resources, and avert military responses to the consequences of environmental dangers. In the international arena, politics, economic, and other factors have traditionally been considered more important than using International Law to protect environmental resources<sup>41</sup>. Current situation regarding fresh water in the Middle East requires implementation of international law and directives with same effectiveness as those concerning non-proliferation and control of environment (Kyoto protocol). Both Isaac and Peter Gleick in their book "Water and Peace in the Middle East" argue that the UN and international aid agencies must co-operate by using International Law and the UN charter on peaceful resolution of disputes, to create an effective compromise over these overused water resources. International Law is completely ineffective regarding regulation, distribution, management or sharing of water without any enforcement mechanisms. International bodies, along with the US, must develop 'teeth' to back up and implement their policies and mandates. Sanctions must be put on nations that violate any International agreement<sup>42</sup>.

<sup>39</sup> Madani, K. (2014). *Water management in Iran: what is causing the looming crisis?* *Journal of environmental studies and sciences*, 4(4), 315-328.

<sup>40</sup> Postel, S. (2014). *The last oasis: facing water scarcity*: Routledge.

<sup>41</sup> Lawless, R., & Blake, G. (2016). *The Changing Middle Eastern City*: Routledge.

<sup>42</sup> De Chatel, F. (2017). *Water sheikhs and dam builders: stories of people and water in the Middle East*: Routledge.

A large part of the Middle Eastern resource dispute concerns the equitable utilization of shared waters. The uneven distribution of resources such as water is one of the key factors posing a risk to international peace in the future. When a nation like Israel feels like they are being treated unfairly solely because they are downstream from the main water supply, which is controlled by their Arab neighbours, it is easy to see how a conflict is within the realm of possibility. Therefore, these nations must share data on disputed water resources to promote co-operation. With the assistance of international joint commissions, which base themselves and their action on the principles outlined in the UN charter, the development and success of co-operative measures in the Middle East can be achieved<sup>43</sup>. However, first of all a comprehensive law needs to be made at international level, which would be comprehensive and positively endorsed by all, then the mechanism for its implementation be checked out. All parties must be included in treaties and they should be flexible enough to adapt to long-term changes and new developments in water resource data. The outlining of these basic concepts and their implementation should be made effective through international commissions<sup>44</sup>.

United States must play a vital and leading role in brokering of a peaceful settlement in a conflict over water. Solutions may be difficult and complicated due to varying ethnic, ideological, political and religious tensions. Peter Rogers in his book *Water in the Arab World* concludes that, "The answer to the water crisis should not be a quick fix through water transfer. The initial phase of an action plan should emphasize a joint institutional approach to sustainable management based on the exchange of information and experience and the design of viable options to benefit the countries sharing water resources". Desalination, storing and directing water are other technological solutions. The situation is delicate and these solutions must be examined in greater detail before developing an ultimate solution acceptable to the entire Middle East<sup>45</sup>.

Over the next few decades an absolute limit will be reached on the availability of water in the Middle East. By the year 2025, one-third of the world's population will face an acute water shortage and much of this shortage is centralized in the Middle Eastern region because too many nations are fighting over limited resources. The solution would be to develop a way to increase the amount of water available from what is currently thought to be achievable. Thus, a viable alternative to the problem is to find and extract additional water from the sea. Unfortunately, because of contamination problems, desalination has become an extremely difficult and complex task. The desalination issue must be considered seriously because the amount (of water) at our disposal is simply not sufficient to meet the essential demands. Desalination projects are very costly and, as yet they may not be cost-effective or of competitive value. But when one takes into account the exponential population growth and the 10-20 years' time frame that a project of this magnitude would take to implement, the nations in the Middle East must begin to plan now for their survival in the future without adequate reserve of freshwater. This is stressed in a report by Isaac, in his book '*Water and Peace in the Middle East*'. "We are at the end of the era of freshwater as our sole resource; we must adapt ourselves towards desalination. This process requires a carefully planned multidisciplinary approach"<sup>46</sup>.

<sup>43</sup> Lonergan, S. C. (2018). *Water and conflict: Rhetoric and reality Environmental conflict* (pp. 109-124): Routledge.

<sup>44</sup> Goldschmidt Jr, A. (2018). *A concise history of the Middle East*: Routledge.

<sup>45</sup> Shiva, V. (2016). *Water wars: Privatization, pollution, and profit*: North Atlantic Books.

<sup>46</sup> Chatterji, M., Arlosoroff, S., & Guha, G. (2017). *Conflict management of water resources*: Routledge.



Isaac and others advocate the use of solar powered desalination as a realistic solution to solve the shortage of water problems in the next 50-100 years. Along with their ability as the world's peacemakers and law enforcer the US and some of the Western countries have the technical expertise and the resources to assist the region to develop cost-effective desalination plants. US and other Western countries are the only trusted mediators able enough to overcome Arab-Israel and Inter-Arab enmity. The best way that this could be achieved is through solar-powered desalination of brackish groundwater. This would clean up the contamination problems currently associated with the main seashore aquifer in the Middle East. International consortium such as the UN should help in providing the funding, expertise, and protection of the desalination plants as a part of its policy on international peace and global environmental protection and earth's resources management for sustainable development (Postel, 2014)<sup>47</sup>. Some contend that desalination is too costly, but a conference in the summer of 1996 revealed that the cost of desalination has decreased to \$.50 per cubic meter, which is cheaper than importing water or building peace pipelines. But, as Peter Rogers indicates in his book *Water in the Arab World*, desalination is still three to four times more expensive than conventional sources of freshwater. He agrees with Isaac and finds that the cost of water desalination would be around, \$.40 to \$.60 per cubic meter. Isaac concludes his article on desalination by declaring that, "We are at the end of the age of dependence upon natural freshwater resources, and that we must adjust, and look towards desalination. This process requires cooperation between Israel and Jordan, in order to implement a carefully planned multidisciplinary approach. Both parties bear the responsibility for beginning a new trend in the most vital matter for essential human survival; we can bear the burden if we start a new era of co-operation. Environmental threats will replace nuclear weapons as the largest threat to the international political arena in the twenty-first century. International policy must quickly adjust to be able to predict and react to these challenges. International co-operation and desalination are only two examples of possible regional solutions. Other ideas range from mountain aquifers, dams, and peace lines, all of which contain both positive and negative sides. The water shortages in the Middle East will continue to be a major source of conflict in the region until a multilateral plan is developed to appease each nation. Most definitely, it is not a simple task.

## CONCLUSION

Water supply in the Middle East is a complex issue with significance hard to appreciate by those from temperate northern latitudes. Due to the region's arid climate, water has always been a core national concern, however, the supply is reliant on the exploitation of four main rivers, the Jordan-Yarmuk, the Nile, the Tigris, and the Euphrates. The demand is threatening to exceed sustainable supply, making water a possible cause of conflict. Three sets of factors, regional politics, the scale of increase in demand and the availability exploitation of alternative supplies of water, will determine whether the water crisis will culminate into a war in the region or otherwise. Water supply is inextricably enmeshed in the factious, antagonistic web of regional politics. In the Jordan Valley, all issues are dominated by the Arab-Israeli conflict. For Israel, water is a vital resource for the creation and development of the Jewish State. Water has also been used as a tool in the pursuit of wider political goals, for example in the expulsion of the Palestinians from Jordan. The hostility of her neighbours means Israel is only willing to release control of this key asset if it's supply, and her national security, are assured. Jordan, equally reliant on the Jordan River, is too weak to be able to dictate solutions and suffers most from the riparian conflict. Lebanon has a relatively plentiful water supply that is coveted by her stronger neighbours. Syria's main goal is the restoration of her territorial integrity without making major concessions to Israel; water is a

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<sup>47</sup>Postel, S. (2014). *The last oasis: facing water scarcity*: Routledge.

tool in the pursuit of that aim. Conversely, Syria's central concern in the Tigris-Euphrates Basin is water supply. Turkey, Syria and Iraq have vigorously pursued their own water management plans with little regard for the interests of their neighbours. All are reliant on the exploitation of the Euphrates for their future economic success. Once again, water supply is complicated by wider political factors including a border dispute between Turkey and Syria, long-standing personal animosity between the leaders of Syria, Turkey and Iraq, the Kurdish issue and Iraq's isolation following the second Gulf War.

Water is, therefore, a vital national interest of all states and one on which their future economic success depends. Yet, there is no tradition of co-operation over water supply; instead, it has been a source of friction and conflict. The causes of dispute remain and there is little sign of an emerging consensus. Global factors are dramatically increasing the demand for water. The Middle East's population growth, one of the highest in the world, will significantly increase domestic demand. Urbanisation, industrialisation and higher standards of living will exacerbate the problem. Global warming is likely to reduce the available water supply while political considerations will prevent a reallocation of water away from the agriculture sector, the major user of water in the area. The increase in demand has already started and will escalate rapidly in the near future. Some states, particularly Israel, are undertaking major water conservation programmes, expanding their desalination capacity and improving the utilization of existing resources. These measures can only delay demand exceeding supply, not prevent it. Other states lack the resources or technology to improve their water usage. There are proposals for co-operative ventures that could provide alternative water supplies but none have so far received the political support essential to transform them into reality, due to vested interests. While all states recognise water supply as a problem, none have found a way to separate this issue from the long history of suspicion and antagonism that typifies international relations in the area. When demand does exceed supply, water may be used above the sustainable rate. These problems are exemplified in the Occupied Territories, now increasingly under the control of the Palestinian Authority.

International law on riparian issues is not clear-cut and states have widely differing interpretations, suiting their own convenience. Furthermore, international law is not mandatory or easily enforced. There is no generally accepted arbitration system to defuse water disputes. In sum, demand for water is rapidly outstripping sustainable supply in the Middle East and there is no sign of states co-operating to find a solution. This will cause a confrontation and the issue is vital enough to cause war. The intense international pressure and the strong military powers of Israel and Turkey, the states who currently control the water supply, may prevent a war on this issue. However, given the fractious history of the area and the central importance of water, this may perhaps be an optimistic view. The last war in the Middle East was over oil; if there is another war, it will almost certainly be over water.

Finally, the water crisis in the Middle East is inexorably interconnected with political, economic, geographical and religious issues. The water environment is diverse and dynamic. It is vast and encompasses many countries with histories of conflict over many issues. Therefore, there is not quick solution to the present problems. But there is no doubt that a comprehensive solution must be found to avert the present crisis turning into a catastrophic conflict in the near future. It's not merely for the short-time interest of the people of this region, but for the survival of mankind, that co-operation and mutual understanding need to be established wherever there are problems and conflicts over water resources. Failing this will erode the delicate balance in our eco-system and eventually affect all human being.

## **RECOMMENDATIONS**

In order to solve the water crises in the region the following recommendations are made: -

- a. There are two basic categories of solutions to water resource limits: Increasing freshwater supply, by increased catchments of winter floodwater, importing water, wastewater reclamation, and desalination of seawater, or decreasing freshwater demand by using water-efficient techniques in agriculture.
- b. An efficient system to recycle the city wastewater for high value agriculture should be looked into. This would ensure more crops per drop of water.
- c. Activate the role of civil society local communities, women, the private sector, the non-governmental organisations and other institutional actors in resolving the problem.
- d. International law regarding water distribution, control of pollution and treatment of water, before it leaves the frontiers of a state, should be formalised. The UN should enforce this law and introduce a mechanism to check its implementation.
- e. The regional countries must develop cooperation for joint undertakings for the exploration of water resources and their even and fair distribution.





# Impact of Talent Management on the Performance of an Organization: A Study

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## **ABSTRACT**

*Talent Management in an Organization alludes to those unique stages an organization embraces to enrol, create, and hold its pool of top talent. The means received ought to typically be inventive and ought not to extend organization. Talent Management likewise means a purposeful methodology taken up by an organization to attract, create, and hold people with the fitness and capacities to meet the present necessities as well as future organizational requirements. As business scans for new as well as better methods for accomplishing competitive advantage, the limit of each functional region to improve organizational performance is under investigation. Employee retention and talent management have been a basic issue for some organizations over the globe and an equivalent testing circumstance for HR managers. According to a gauge, the expense of losing an employee extends between one to 2.5 occasions the employee's pay rates. With high employee turnover, enterprises dependably face the danger of lower productivity, diminished employee engagement, increased training costs, and unwanted notoriety of employee steady loss. Organizations do understand the impact of employee retention on the long-haul development and success of their organizations, particularly in the competitive Indian IT (Information Technology) industry. Technological advances and worldwide challenge are the primary drivers of changes in business designs, prompting serious challenge between bosses to attract and hold talented specialists. The present article discussed about impact of talent management on the performance of an organization.*

## **1. OVERVIEW**

In these days of highly competitive world, where change is the only constant factor, it is important for an organization to develop the most important resource of all - the Human Resource. In this globalized world, it is only the Human Resource that can provide an organization the competitive edge because under the new trade agreements, technology can be easily transferred from one country to another and there is no dearth for sources of cheap finance. But it is the talented workforce that is very hard to find.

In writing, talent management is characterized as a procedure to attract, create, and hold high potential entertainers from outside just as inside the organization. It is a persistent procedure of outer enlistment and determination and inner development and retention. This is accomplished through talent obtaining. Talent obtaining is a proactive methodology for long haul point of view in which high talent are selected not for just current positions but rather for future positions which are not yet known but rather is relied upon to be there in future. Besides, talent obtaining includes talent recognizable proof and development as well as talent engagement and retention in the organization. They discovered three significant recognitions for talent management. The first is that talent management is included "an accumulation of run of the mill human resource department practices...such as enlisting, choice, development and profession and succession management".

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This idea contends that talent management is minimal more than customary HRM. That is the origination of talent management all the more explicitly centers around anticipating or displaying (in support of dealing with) the progression of human resources all through the organization, based on such factors as workforce skills, free market activity, and development and steady loss. This origination represents talent management being pretty much like HR planning if especially associated with other organizational databases and systems centers around sourcing, creating and rewarding employee talent, for example, attention on a chosen few versus all employees (high potential employees). And furthermore, the talent of the organization is the key employee with recognized performance and fitness who can give a competitive advantage to the organization.

This point of view of talent management has seen evidential success as far as organizational performance and acknowledged gains in deals and profitability. Today we are living in a period where change winds up unavoidable. To run organizations easily, viable and effectively, the most significant and essential factor organizations need a human resource. The success of an organization relies upon the persevering, faithful, and included managers and employees. Management of employees is generally subject to the nature of leading organizations had.

In this setting, Talent management (TM Employee Engagement (EE) ideas have been broadly considered in management writing in the previous ten years. The two ideas have been a zone of enthusiasm for the two practitioners and scholarly scientists. Accordingly, different examinations have been directed independently for every idea meaning to explore their impact on organizational performance. The present examination investigates the relationship between talent management and employee engagement and by looking into the relationship between the two ideas and exploring their impact on organizational performance. The purpose behind leading this exploration is that a large portion of the examination about this subject has contemplated the relationship between talent management and by and large organizational performance [1-7].

## **2. THE EFFECT OF TALENT MANAGEMENT ON ORGANIZATIONAL PERFORMANCE**

This generally ongoing accentuation on talent management speaks to a change in perspective from progressively conventional human resource related sources of competitive advantage writing, for example, those that attention on organizational elites, including higher class writing, and strategic human resource management (SHRM) towards the management of talent explicitly fit to the present unique competitive condition. While the setting may have moved essentially since the last piece of the only remaining century, the thought of talent management stays significant. Seemingly the test of expanding the competitive advantage of an organization's human capital is considerably increasingly huge in the recessionary atmosphere of the last piece of the opening decade of the twenty-first century.

Strategic talent management as activities and procedures that include the systematic distinguishing proof of key positions which differentially add to the organization's maintainable competitive advantage, the development of a talent pool of high potential and high performing officeholders to fill these jobs, and the development of a separated human resource design to encourage filling these situations with skilled occupants and to guarantee their proceeded with promise to the organization.

Key positions are not confined to the top management group yet additionally incorporate key positions at levels lower than the TMT and may change between working units and for sure after some time. In spite of the growing notoriety of talent management and over a time of discussion and promotion, the idea of

talent management stays indistinct. There is an irritating absence of lucidity in regard to the definition, degree, and by and large objectives of talent management, a view which additionally wins in the practitioner writing. HR experts attempted talent management activities, anyway just 20 percent of them worked with a formal meaning of talent management. The present condition of talent management writing is exacerbated by the fact that, notwithstanding ambiguities around the meaning of the idea, there has likewise been a disturbing absence of hypothetical development in the territory. The above-featured inadequacies in writing on talent management have constrained both insightful work on the subject and its practical handiness. This shortcoming is noteworthy for various reasons. Most strikingly, a critical assortment of strategic HRM writing has indicated the capability of human resources as a source of supportable competitive advantage and contended that the resources and capacities that support firms' competitive advantage is straightforwardly attached to the abilities of talented people who make up the company's human capital pool.

Further, an ongoing investigation of 40 worldwide organizations found that every one of them recognized an absence of an adequate talent pipeline to fill strategic positions inside the organization, which impressively obliged their capacity to develop their business. At long last, talent management activities possess a lot of organizational resources. Without a doubt, an ongoing report found that Chief Executive Officers (CEOs) are progressively associated with the talent management process, with most of those overviewed spending more than 20 percent of their time on talent issues, while some spent up to 50 percent of their time on talent issues.

### **3 TALENT MANAGEMENT: HIRING AND DEVELOPING ENGAGED EMPLOYEE**

The top trends in the field of human resources (HR) in the United States (US) as forecasted by the Society for Human Resource Management (SHRM) have remained relatively constant since 2003. US Human Resource Management (HRM) specialists tend to emphasize domestic issues related to healthcare and legal challenges. This emphasis differs from trends found in the international arena, where HRM professionals identified the following as their key priorities for 2013 and beyond:

1. Managing talent
2. Improving leadership development
3. Enhancing employee engagement

Granting that there are a multitude of challenging issues under the umbrella of HRM, managing talent and enhancing employee engagement have been among the top four key priorities for HR leaders in the US since 2008 with improving leadership development (LD) coming to the forefront beginning in 2010. These three international trends have domestic implications as the global competition for jobs and talent accelerates, economic growth expands in emerging markets and as students and workers gain cross-cultural savvy. Even with their importance as identified through HRM surveys since 2008, managing talent, improving LD, and enhancing employee engagement have not been considered together as a continuum within the context of higher education or libraries. Friedman writes that we live in a time when the world has become flat.

### **4. WORK PRACTICE EFFECTIVENESS**

Given the present condition of the business condition, employee engagement can be basic to business success. In an investigation of 35 huge business organizations with an enormous number of divisions, a positive correlation was found between employee engagement and generally business success. In development, this would mean employee engagement influencing the essential measurements of the

undertaking conveyance process that covers creation, productivity, quality, safety, and the customer, just as accomplice (satisfaction) relationship. For employees to be locked in, they need to for the most part be satisfied at work. Shrewd organizations comprehend that glad employees are additionally increasingly profitable, steadfast, excited, and are focused on remaining at that organization.

Thus, most organizations attempt somehow to achieve this through contracting practices, having laborer amicable arrangements, advancing based on legitimacy, and so forth. In any case, many find that, disregarding their earnest attempts, their employees are commonly dissatisfied. This prompts their administrators rousing uninterested, uncooperative, baffled, and ineffective employees. The basic mediations used by management incorporate close supervision, motivational talks, potentially training, some type of incentives, or discipline. These conventional management intercessions have demonstrated to be inadequate over the long haul.

## **5. MANAGING ORGANIZATIONAL EFFECTIVENESS THROUGH TALENT MANAGEMENT AND CAREER DEVELOPMENT**

Businesses exist to achieve high productivity in their working styles and produce a competitive edge in the worldwide economy. To accomplish this edge and high proficiency, firms need talented and connected with employees. The job of human resource management turns out to be significantly more significant than any other time in recent memory in this competitive time. In this manner, talent management (TM) is dealing with the fitness, authority, and power of employees inside an organization. TM supports the procedure of enlistment and develops the people skills to satisfy the human needs of an organization.

The principal regions of TM incorporate enrolling, choosing, onboarding new employees, performance management, professional development, and employee engagement. An examination demonstrates that the absolute most noteworthy test in human resource is to make their organization's capacity to go after talent. Significant examinations have done to interface the talent management to the person just as organizational performance, yet little is thought about the job of talent management in improving employee engagement. The idea of talent management was first begun in the 1980s and 1990s.

## **6 TALENT MANAGEMENT GLOBAL PERSPECTIVE**

Managing talent is a test to all organizations with regards to globalization independent of the nation. Also, the worry about the shortage of talent is practically all-inclusive. Organizations around the globe are seeking a similar pool of talents. This is viewed as a worldwide work market for talents. The pattern of worldwide mix demonstrates organizations' institutionalizations in talent enrollment, development, and management, to guarantee their competitive position and consistency. In this way, organizations need to adjust worldwide prescribed procedures of talent management and in the meantime adjust the neighborhood prerequisites and nearby work market.

One hundred seventy human capital management experts and officials had the accompanying discoveries; 57 percent of organizations referred to the powerlessness to both get the talent required and address talent necessities throughout the following five years as their top in general test. Seventy-nine percent of the organizations' main concern was the issue of challenges in actualizing succession planning. The investigation likewise uncovered that 71 percent of the organizations reviewed had formal retention plans for official and 65 percent for the mid-level management staff. These days, land, capital, and fixed resources are never again secret weapons for the organizations to be exceedingly competitive

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in the present economy. Human capital is a distinct advantage to adjust the organizations to the overall challenge. Subsequently, organizations are going up against one another to procure and hold talents to keep up their tasks and keep on growing. The war for talent isn't just about giving talents money related incentives and material rewards, it is increasingly about developing techniques and methodologies that will guarantee talented people, who are happy to learn, emerge and contribute.

## 7. CONCLUSION

Writing demonstrates that talent management significantly affects the person just as organizational results. To our knowledge, the past writing did not clarify the relationship of talent management, vocation development and employee engagement with organizational viability. In this manner, to connect this hole, the present investigation expects to build up a system which directs the bank's management to improve their performance by giving individual development openings. The second objective of this examination is to research the intercession system of employee engagement in the relationship between talent management, vocation development, and organizational performance.

The motivation to attempt this examination is that each organization needs to accomplish its objectives by utilizing their resources at an ideal dimension, and the organizations can accomplish its best performance by developing their human resources. Talent management and vocation development are those huge practices which improve the dimension of employee engagement, which therefore increases the organizational adequacy. In this manner, the present examination endeavored to accomplish the best organizational performance through employee development practices. The essential commitment of this examination is to broaden the current group of knowledge by exactly building up the association between individual development practices (talent management and profession development) and organizational viability which was generally disregarded in the region of human resource development. Furthermore, the present investigation clarifies the intervention procedure of employee engagement in the relationship between talent management and organizational adequacy.

Organizations should plan such talent management programs that apply to their employee's talent and the future needs of the organization. Also, organizations ought to advance an agreeable situation in which work exertion is composed. Organizations ought to advance such kinds of systems and strategies that enable them to think about the requesting talent. For the usage of this procedure, organizations need to think about the current and potential talent that is required.

Organizations have realized the need for talent management and are now focusing to develop and retain the existing talent in their organization rather than trying to acquire a new talent because the cost of identifying, developing and retaining the talent internally is more cost effective instead of replacing the talent which is lost from external market. Though it may appear initially that in the process of retaining talent, we are spending more in terms of increased wages, rewards and recognition, when we practically analyze, the cost of acquiring a new talent is higher. Apart from higher cost of acquiring the new talent it has to additionally face the initial hiccups of this new employee getting along with the organizational goals and strategies.

Every business unit is making sure that they can respond and withstand the challenges of talent crisis by developing an effective talent management strategy like identifying the key talented people in the organization, cultivating and developing the skill of their present workforce and retaining highly talented employees by protecting them from competitors. Workforce planning translates business



strategy into talent management activities. Each company needs to understand the problem it faces, estimate the gaps in its industry and determine the skills it needs to meet business objectives. The direction in talent management is to a fact-based understanding and prioritization of what is needed. It's important not to adopt individual processes and tools in isolation from others. Talent Management is a new, more holistic approach to HR. Talent Management is beneficial to both the organization and the employees.

## REFERENCES

- [1]. Baral, S. (2014). *Attracting and Retaining Talent Total Reward Strategy. International Journal of Social Science and Interdisciplinary Research*, 3.
- [2]. Schuler, R. S., Jackson, S. E. & Tarique, I. 2011. *Global talent management and global talent challenges: Strategic opportunities for IHRM. Journal of World Business*, 46, 506-516.
- [3]. Deery, M. and Jago, L. (2015), "Revisiting talent management, work-life balance and Retention strategies", *International Journal of Contemporary Hospitality Management*, Vol. 27 Iss 3 pp. 453-472.
- [4]. Frank, F.D. and Taylor, C.R. (2004). *Talent Management: Trends that will shape the future. Human Resource Planning*, 27, (1), 33-41.
- [5]. Collings, D. and Mellahi, K. (2009). *Strategic talent management: a review and research agenda. Human Resource Management Review*. 19, 304-313.
- [6]. Davis et al. 2007. *Talent assessment: a new strategy for talent management*, Gower, United States of America
- [7]. P. Cappelli, and J. R. Keller; *Talent Management: Conceptual Approaches and Practical Challenges.*, *Annu. Rev. Organ. Psychol. Organ. Behav*, 2014.

# A Comparative Study of Physical Fitness Among Secondary School Students in Winter and Summer Zones of Udhampur District, J & k

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## **ABSTRACT**

*Although it is generally agreed that Physical Fitness is an important part of the normal growth and development of a child. Fitness is constantly changing and is influenced by many factors. Health is an important input in any process of development. An unhealthy society cannot be a society of high achievers and cannot make a nation great. The objective of the study is to find out the Health related Physical Fitness of school going children of different board to suggest means to improve health related physical fitness. Three forty boys of 12 – 15 years age group will be Randomly Selected as subjects of this study from each board. Their age records will be collected from school records. AAHPER (1987) Health-Related Physical Fitness was used as Test battery. After data was collected suitable Statistical Procedure. Mean and Standard Deviation will be calculated and the effect will be made with the help of "t" ratio. The level of significance for this study will be 0.05.*

**KEYWORDS** AAHPER, Physical Fitness, winter and summer zones

## **INTRODUCTION**

People, who are physically fit look better, feel better and possess the good health for a happy and full life physical fitness is one's richest possession it cannot be purchased, it has to be earned through daily routine of physical exercise. Physical fitness is not entirely dependent on exercise desirable health practice also play an important role. Physical fitness affects the total person their intellect, emotional stability, physical conditioning and stress levels. The load to physical fitness includes proper medical care, the right kinds of food in right amounts, good oral hygiene, appropriate physical activity that is adapted to individual needs and proper amounts of rest and relaxation. The investigator of the present study has earnestly made an attempt to expose the comparative study of physical Fitness of winter and summer students of district Udhampur.

For the current research district Udhampur has been selected to assess the relationship among students of winter and summer zones. District Udhampur is a district in the Indian state of Jammu and Kashmir (In Indian administrative Kashmir). It covers an area of 4,550 square kilometres (1,760 sq mi) in the Himalayan mountains.

Temperature varies considerably in the Udhampur District, as the altitude ranges from 600–3,000 metres (2,000–9,800 ft) and is divided in winter and summer zones.

## **METHODS AND MATERIALS**

Although it is generally agreed that Physical Fitness is an important part of the normal growth and development of a child. Fitness is constantly changing and is influenced by many factors. Fitness is based upon a solid foundation of good health. Healthful living implies freedom from disease, enough strength, endurance, skill, agility, capacity to meet the daily demands and sufficient reserves to meet

extra ordinary stresses without undue fatigue, besides mental development and emotional balance according to the maturity level of the individual. Physical fitness is one of the most important things in life and one of the most valuable assets on As subjects of this study from winter and summer zone of Udhampur district in J&K, Forty-Forty boys of 15-21 years age group were randomly Selected from Government High school Tank dhar (winter Zone) and Forty boys from Government High School Talora (Summer Zone) respectively. Their age records was collected from school records. AAHPER (1987) Physical Fitness Test battery consisting of following four test items was used to assess and compare the physical fitness for boys of winter and summer zone. We selected the subjects from the 8th to 10th classes and the age of the subjects ranged 15-21 years.

- 1) 1.5 Mile Run and Walk Test to Measure Cardio-Respiratory Endurance.
- 2) Skin fold measurements: to measure body composition (leanness/fitness)
- 3) Modified Sit-ups: to measure abdominal Strength and Endurance
- 4) Sit and Reach test: to measure the Flexibility of the back and leg (hamstring) muscles to measure the Flexibility of the Back and Leg (hamstring) muscles.

After data was collected by the investigator with the help of assistants was analyzed with the help of suitable Statistical Procedure. Mean and Standard Deviation will be calculated and the effect will be made with the help of "t" ratio. The level of significance for this study will be 0.05. can ever have.

## ANALYSIS AND INTERPRETATION OF DATA

### SOURCES OF DATA

For the present study, data was obtained from both primary (Experimental record) and secondary sources (School records). The primary data was gathered through experimental study in District Udhampur and Secondary data is the second hand information, which is already collected by others and that information is available in printed form.

**Table No. 2: Comparison of 1.5 mile run/walk among winter and Summer zone boys**

Variable	Winter Zone Boys (n=40)		Summer zone Boys (n=40)		‘t’	Level of Significance
	Mean	S.D	Mean	S.D		
1.5 mile run/walk	15.57		1.80		15.781.06	NS

"t" value at NS=not significant. .05 = 1.96 and .01= 2.57

**Table No. 3: Comparison of modified sit ups among winter and summer zone boys**

Variable	Winter zone Boys (n=40)		Summer zone Boys (n=40)		‘t’	Level of Significan ce
	Mean	S.D.	Mean	S.D.		
Modified sit ups	25.36	8.70	26.86	8.55	1.49	NS

"t" value at NS= not significant,.05 = 1.96 and .01= 2.57



**Table No. 4: Comparison of sit and reach among winter and summer zone boys**

Variable	Winter zone Boys (n=40)		Summer zone Boys (n=40)		‘t’	Level of Significance
	Mean	S.D.	Mean	S.D.		
Sit and reach	9.46	2.01	9.67	1.94	0.93	NS

"t" value at .05 = 1.96 and .01 = 2.57

**Table No.5: Comparison of triceps skinfold among winter and summer zone boys**

Variable	Winter zone Boys (n=40)		Summer zone Boys (n=40)		‘t’	Level of Significance
	Mean	S.D.	Mean	S.D.		
Tricep skinfold	12.01	5.29	12.17	5.16	0.26	NS

"t" value at NS = not significant, .05 = 1.96 and .01 = 2.57

**Table No. 6: Comparison of subscapular skinfold among rural boys and urban boys**

Variable	Rural Boys (n=40)		Urban Boys (n=40)		‘t’	Level of Significance
	Mean	S.D.	Mean	S.D.		
Subscapular - skinfold	11.99	5.83	12.50	5.25	0.79	NS

"t" value at NS = not significant, .05 = 1.96 and .01 = 2.57

**Table No. 7: Comparison of total skin fold among rural boys and urban boys**

Variable	Rural Boys (n=40)		Urban Boys (n=40)		“t”	Level of Significance
	Mean	S.D.	Mean	S.D.		
Total skin fold	24.00	10.65	24.67	10.05	0.56	NS

"t" value at NS = Not significant, .05 = 1.96 and .01 = 2.57

## RESULT & CONCLUSIONS

1. No significant difference has been found on one and half mile run while comparing winter and summer zone boys together of district udhampur.
2. There was no significant difference observed on sit up among winter and summer zone boys.
3. Winter and summer zone boys did not show any difference on sit and reach test i.e. flexibility.
4. No significant difference has been found of triceps skinfold between winter and summer zone boys.
5. Winter and summer zone boys did not show significant difference on subscapular skinfold.
6. No significant difference has been observed on total skinfold among winter and summer zone boys.

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**REFERENCES**

1. Bakine S.T (July-2003) *A Comparative Study Of Physical Fitness Level Of JSS Students In Public And Private School In Kwara State, Journal of Teacher Education Trend (JOTET) ,Vol.No.1 Page 95-100 Physical and Health Education Department Kwara State College Of Education, Ilorin .*
2. Bakine S.T (July-2003) *A Comparative Study Of Physical Fitness Level Of JSS Students In Public And Private School In Kwara State, Journal of Teacher Education Trend (JOTET) ,Vol.No.1 Page 95-100 Physical and Health Education Department Kwara State College Of Education, Ilorin .*
3. Bakshi, B.K. "Assessment of Health-Related Physical Fitness of School Students Belonging to Jammu Province" *Unpublished Doctral Thesis, Punjab University, Chandigarh, 2001*
4. Chatterjee S, Chatterjee P, Bandyopadhyay A. (2006). *Skinfold thickness, body fat percentage and body mass index in obese and non-obese Indian boys. Asia Pacific Journal of Clinical Nutrition. 15: 232-235.*
5. Choudhuri Dipayan, Choudhuri Soma, Kulkarni Vasant (2002) *Physical Fitness: A Comparative Study Between Students Of Residential (Sainik) And Non-Residential School(Aged 12-14 Years). Indian Journal Of Physiology and Pharmacology Volume :46, Issue:3, Pages: 328-332*
6. Claessens Al, Hlatky S, Lefevre J, Holdhaus H. (1994). *The role of anthropometric characteristics in modern pentathlon performance in female athletes. Journal of Sports Sciences. 12:391-401.*
7. Clark David H. and Clark H Harison. *Application of Measurement of Physical Education. Mosby and company, New Delhi 1993.*
8. Coe Dawn Podulka (2003) *The Importance Of Physical Education Classes In Relation To physical Activity Behaviors, Physical Fitness And Academic Achievement In Middle School Children. Ph.D. Michigan University, pp-98*

# Comparative Study of Physical Fitness of Non Tribal and Non Tribal Students of Secondary Schools of District Rajouri in J & K State

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## **ABSTRACT**

*The word "Physical Education", Refers to various bodily characters such as physical strength physical development physical health and physical appearance. It refers to the body as a contrasted to mind physical education should aim to improve the mass of students and give them as much health struggle and stamina as possible to unable physical education is the process by which changes on the individual or brought about through his movement experience physical education is the some of the changes in the individual caused by experience centred in motor ability. The purpose of the study is found out the. This study will help coaches and physical education teachers in selecting the good players. This will help physical education teachers and coaches in preparing training programme. This will lead to success in future planning. This will reveal which of the two groups possess better physical education. The result of the study will help to students to participate in sports and game. The result of the study will give the clear idea about physical fitness of the non-tribal and non-tribal boys.*

**KEYWORDS:** *factors affecting on students physical fitness, findings and conclusion*

## **INTRODUCTION**

The objective of physical education concern with building up to physical power throw the growth and development of various systems like respiratory system digestive system in body participation in good programme of physical education promotion of bodily growth strength endurance structurally and functionally. Physical education through physical activities in the process of human behaviour the body is the basis of the function of the Muscular Strength so prevalent in our complicated modern living participation in organized physical education programmes will release these strains and tension to a greater extent. The term physical fitness is included in many familiar test batteries commonly uses in the schools in many cases the inclusion of fitness in such titles is most unfortunate error and one that logically could account at least in part for the current apathy of some people toward total personal fitness. This is not an indictment of physical fitness test batteries most of the batteries are excellent and include tests that do have some definite value but it is our feeling that many of tests in these batteries are not actually of physical fitness. Below performance to standardized tests especially on such items as speed and agility is not necessary indicative of poor physical fitness. If functional fitness is an individual matter than physical fitness tests are more relative than absolute and these are no such thing as reasonably healthy person who cannot improve his physical fitness level.

## **METHOD AND MATERIAL**

To achieve the objectives of a study the investigator / researcher has used experimental method to compare the physical fitness between Tribal and Non Tribal students of Government High school Gundha (Zone Khawas) and Government Boys High school Rajouri (Zone Rajouri) respectively for this experimental method (AAPHER) test of physical fitness is applied to high school boys to collect the

data. In this chapter the procedure adopted for selection of subjects criterion measures. Collection of data procedure for administrating test at the statistical technique used for analysis of data have been presented. Sample size was 40 Male students from Government High school Gundha, are considered as Tribal students and 40 male students from Government Boys High school Rajouri are considered as Non Tribal students, were selected for the study out of forty, twenty students were sports man and twenty students were non sportsman. We selected the subjects from the 8th to 10th classes and the age of the subjects ranged 15-17 years.

## AAHPER TEST

**I) 50 Meter Run :** To measure the speed capacity of the student. Equipments : Two stop watches two instructors chunnam score card pen. Description : This test was administered to two subjects at a time both subjects took position behind the starting line. The starter used the commands ready „Go“ each runner was assigned to a separate time keeper. The time keeper recorded time at the finishing line. The scores were recorded time taken by the subjects to across finishing line from the starting line time was recorded nearest to the one 10th of a second.

**ii)Endurance 1500 mtr Run :** To measure the endurance capacity of the student.

**Equipments :** Two stop watches two instructors chunnam score card-pen. Description : The subjects were instructed to stand on the starting line and asked him 1500 mtr after giving command ready go and he was allowed to runner was assigned to a separate time keeper. The time keeper recorded time at the finishing line. The scores were recorded times taken by the subjects to across finishing line.

**iii. 4x10 Meter Shuttle Run : Purpose :** To measure the agility of the student. Equipments Ground chunnam whistle stop watch score card pen. Description : Performing shuttle Run 10 meter distance was measured on the ground marked with a Chunnam on both sides subjects were instructed to start his run from one side and touching line on other side and returning back to the starting line like this he has to run three times and his time taken after completion of shuttle run was recorded entered in the result sheet in seconds.

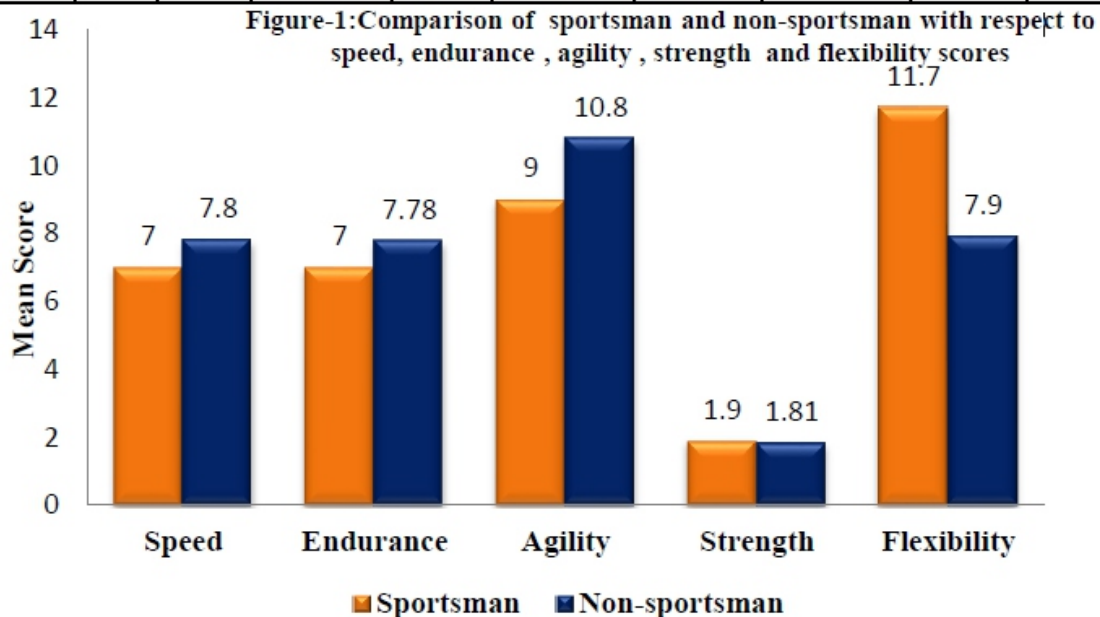
**iv. Standing Broad Jump: Purpose:** To measure the strength of the student. Equipments: Floor chunnam score card pen tape. Description : Subjects asked to stand on a marking line both feet apart and he was instructed to take standing broud jump on the floor after taking jump each distance covered was measured and recorded in meters.

## DIFFERENTIAL STATISTICS

The differences between the group (sportsman and non-sportsman) and location (Non Tribal and Tribal) with respect to speed 50 meters run, endurance 1500 meters run, agility 4x10 meters shuttle run, strength broad jump standing and flexibility sit and rich from sportsman and non-sportsman boys of high schools were compared by u unpaired t-test and the results were discussed in the preceding section

**Table-1: Results of t test between sportsman and non-sports man with respect to speed, endurance, agility, strength and flexibility**

Variables	Groups	Mean	SD	t-value	p-value	Signi.
Speed 50 meters run	Sportsman	7.0995	0.2385	-10.6247	0.0000	S
	Non-sportsman	7.8983	0.4113			
Endurance 1500 meters run	Sportsman	7.0490	0.4731	-8.1157	0.0000	S
	Non-sportsman	7.7877	0.3280			
Agility 4x10 meter shuttle run	Sportsman	9.0405	0.1247	-35.9808	0.0000	S
	Non-sportsman	10.8840	0.2991			
Strength broad jump standing	Sportsman	1.9678	0.1570	3.1999	0.0020	S
	Non-sportsman	1.8168	0.2538			
Flexibility sit and reach	Sportsman	11.7000	3.6459	5.5323	0.0000	S
	Non-sportsman	7.9000	2.3621			



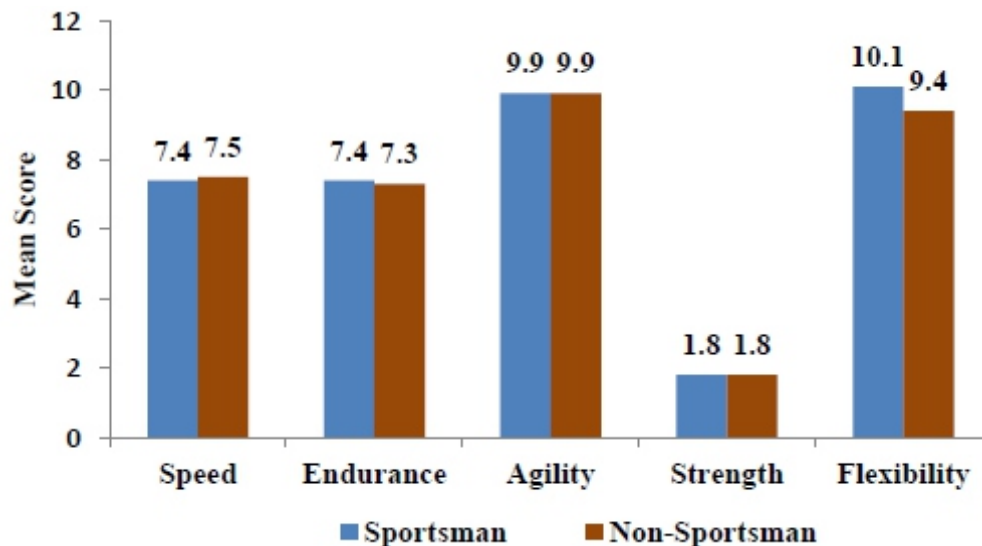
**Table-2: Results of t test between Tribal and Non Tribal (sportsman and non-sportsman) of high school boys with respect to speed, endurance, agility, strength and flexibility**

Variables	Location	Mean	SD	t-value	p-value	Signi.
Speed 50 meters run	Non Tribal	7.4583	0.5378	-0.6930	0.4904	NS
	Tribal	7.5395	0.5105			
Endurance 1500 meters run	Non Tribal	7.4452	0.6043	0.4351	0.6647	NS
	Tribal	7.3915	0.4946			
Agility 4x10 meters shuttle run	Non Tribal	9.9375	0.9461	-0.2304	0.8184	NS
	Tribal	9.9870	0.9754			



Strength broad jump standing	Non Tribal	1.8938	0.2350	0.0598	0.9525	NS
	Tribal	1.8908	0.2133			
Flexibility sit and rich	Non Tribal	10.1500	3.5988	0.8678	0.3882	NS
	Tribal	9.4500	3.6158			

**Figure 2: Comparison of Tribal and Non tribal (sportsman and non-sportsman) of high school boys with respect to speed, endurance, agility, strength and flexibility score**



## RESULT/FINDING AND SUGGESTIONS

The purpose of the study is to compare the physical fitness of Non Tribal boys versus Tribal Boys of High Schools of District Rajouri. For testing the physical fitness, administered (AAHPER) Fitness test of 40 boys from Tribal high schools and 40 Boys from Non Tribal high schools were selected. Further two groups were formed 20 boys each of sports men and non-sportsmen for both Non Tribal and Tribal area. For collecting the data (AAHPER) Fitness test administered to these boys, The variables in these tests are speed, endurance agility strength and flexibility. The data were analyzed with reference to the objectives and hypotheses by using differential analysis with student unpaired t-test by using SPSS 11.0 statistical software and the results obtained thereby have been interpreted.

## CONCLUSION

Within the limitation of this study the following conclusions justified as per the results obtained. Of the five Physical variables Speed, Endurance, Agility, Strength and Flexibility were found to be the sportsman boys of high school have higher strength and flexibility whereas Non sportsman have higher in speed Endurance and Agility. Tribal and Non Tribal boys have similar in Speed, Endurance, Agility, Strength and Flexibility.

## REFERENCE

1. Ackland TR, Ong KB, Kerr DA, Ridge B. (2003). Morphological characteristics of Olympic sprint canoe and kayak paddlers. *Journal of Science and Medicine in Sport*. 6:285-294.
2. Agashe C.D. and Karkare Ajay (2003) "Comparative study between tribal and non-tribal sportsperson of Chhattisgarh related to their motor fitness" *Tribal Health Bulletin*, Vol.9 (1&2), pp 46-51.
3. Alutu, A.N.G. & Eraikhuemen, L. (1999) *A Comparative Study of the Academic Performance of Some Selected Private and Public Junior Secondary School Students in Egor Local Government Area of Edo State*, *African Journal of Educational Research*. Vol. 5 (2). Pp 121 – 130. *An Participant Children Of Secondary Schools In Physical Education University Of Kurukshetra : Ph.D. Thesis (Unpublished)*

4. Bakine S.T (July-2003) *A Comparative Study Of Physical Fitness Level Of JSS Students In Public And Private School In Kwara State, Journal of Teacher Education Trend (JOTET) ,Vol.No.1 Page 95-100 Physical and Health Education Department Kwara State College Of Education, Ilorin.*
5. Bayios IA, Bergeles NK, Apostolidis NG, Noutsos KS, Koskolou MD. (2006). *Anthropometric, body composition and somatotype differences of Greek elite female basketball, volleyball and handball players. J Sports Med Phys Fitness, 46, 2: 271-80.*
6. Bidin Samsiah , Jusoff Kamaruzaman (2009)*The Influence Of Gender And Social Economic Status On Boarding School Students' English Language Performance, Canadian Social Science ISSN 1712-8056 Vol.5 No.5 2009 Canadian Academy of Oriental and Occidental Culture 10/31/2009)*
7. Bourgois J, Albrecht L, Claessens Jv, Renaat P, Renterghem Bv, Thomis M, Janssens M, Loos R, Lefevre J. (2000). *Anthropometric characteristics of elite male junior rowers. British Journal of Sports Medicine. 34:213-216.*
8. Butler, Loren L. (2003) *A Comparism Of Fitness Levels For Fifth Graders Home School, University of Arkansa,2002.104pp) (Dissertation Abstract International. Vol.63.no.10 April 2003)*
9. Cagno A, Baldari C, Battaglia C, Guidetti L, Piazza M. (2009). *Anthropometric characteristics evolution in elite rhythmic gymnasts. Ital J Anat Embryol, 113, 1: 29-35.*
10. Camic CL, Housh TJ, Mielke M, Hendrix CR, M Zuniga J, Johnson GO, Hous DJ, Schmidt RJ. (2009). *Age-related patterns of anthropometric characteristics in young wrestlers. Med Sci Sports Exerc, 41, 5:1014-9.*





# Developing Speaking Skills in Primary Classes

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## **ABSTRACT**

*This article describes the ways in which reading qualities formulate correct, quick, conscious, expressive reading skills and new approaches to eliminating the speech deficiencies of students.*

**KEY WORDS : Speech growth, elementary education, reading qualities, correct reading, conscious reading, expressive reading, speech shortcomings, struggle for speech**

## **INTRODUCTION**

In the current period aims are to train high-quality and comprehensively advanced personnel, to educate them as mature cadres of the world standards level in harmony with the modern world. That's why a lot of attention is paid to the educational process saying in a word to Higher and Secondary Education. As a vivid proof of my opinion, I can quote the decree of our President PD 1875 "On Measures for Further Improvement of The Foreign Language Learning System".[1] Within the framework of the implementation of the law of the Republic of Uzbekistan "on Education" and the national program of training of personnel, a system was created the formation of a modern, educated, modern-thinking young generation aimed at harmonious development, further integration of the Republic into the world community.

## **MAIN PART**

During the years of independence, more than 51.7 thousand foreign language teachers were trained, multimedia textbooks on English, German and French for 5-9 classes of secondary schools, electronic resources for Learning English in primary schools were prepared, and more than 5 thousand audio classes were equipped in secondary schools, vocational colleges and academic lyceums.

At the same time, the analysis of the current system of organizing the study of foreign languages shows that educational standards, curricula and textbooks do not fully meet the modern requirements, in particular, the demand for the use of advanced information and media technologies. Education is conducted mainly in traditional methods. The organization of continuous learning of foreign languages at all stages of the educational system, as well as improving the skills of teachers, as well as providing them with modern educational and methodological materials, is subject to further improvement."

From this it can be seen that the radical reform of all types of education was taken as the main goal. The 1st stage of the course is the organization and improvement of preschool education and primary education work. In the development of Education, great attention is paid to preschool education and primary education, these areas are also undergoing tremendous changes because this stage of education is considered the foundation of general secondary education and therefore it is not surprising to focus on this stage. The stronger the foundation, the more durable the building will be. Infact, the basis of education is pre-school education and primary education; therefore, work in these areas, practical processes must be clearly defined and planned in advance .

Children who come to the primary class are brought up in different environments and come to the 1st Class with different skills, so we can also observe some shortcomings in them. Working with such children will certainly give the teacher a little trouble, if not less. For example, some children may suffer from the pronunciation of some letters, while some may not recognize the letter at all. Therefore, the teacher must be able to formulate in the course of the lesson as a separate person for each student. But even then, some children still feel alienated by feeling themselves as strangers. The teacher practically applies his master's psychology, talking with the child determines his character and temperament. Due to the character and temperament of the child, he organizes the educational process in such a way that it suits the student. The question may arise as to why we should carry out such work in the process of primary education. To this question, I would like to highlight the main works that are carried out in the primary classes; in the primary classes it is precisely the stage of preparation for the subjects of mother tongue and literature, which is studied in the later stages of general secondary education in the subjects of mother tongue and reading, which is the main. In this, again, the question may arise: Why do we have to fight for speech by skipping speech-building exercises in the primary classes. The answer to this question is its own known. The great Alisher Navoi says: "The difference of man from other beings is his language"[2] that is, speech is one of the main factors that distinguishes man from other beings. There is such a proverb in our people: «language is the key to the soul". Our people did not say this proverb in vain, the fact is that the language is a guarantee that all affairs will be good or bad. This is felt even when we focus on those around us. Who knows what is saying, that at the place of his affairs all are in his place, and who cannot even speak the word furiously, that his affairs have gone back we can see. Therefore our people did not even say for nothing that "one hundred coins worth a thousand coins worth a work". More attention is paid to the fact that the struggle for speech is conducted more in primary education than in other stages of education. Because first of all speaks clearly and fluently without being caught up in other stages of education, when elementary schoolchildren can speak fluently from a young age. The second Elementary School student sees his teacher as an excellent person and does what he says without words. The third is that the beginner class is the basis of education, so it is desirable that everyone started the work from the beginning. When we get acquainted with each of the textbooks of the primary classes, we are given separate exercises for reading and developing speech not only in the native language, but also in other textbooks. But the fact is that in the lessons of reading and native language, a lot of oral exercises are given, and a lot of attention is paid to the oral speech of the reader. For example, take the exercise 204 on the 2-nd grade (theme: words that denote the action of a person and something) in the class of the native language textbook: condition of the exercise: read and continue, write down your thoughts and draw two straight lines under the words that denote the action.

"What kind of humanity a person is known from his attitude towards animals..." [3]

### **DATAANALYSES**

After reading the text of this exercise, students should continue the exercise by explaining their thoughts. But students will have difficulty continuing without the help of a teacher. Therefore, the teacher can act as follows: what kind of person a person is known from his attitude to animals...The teacher who read this text to the students: Kids! What do humans differ from animals? Then the pupils may answer: with consciousness, with speech, or with another answer. And the teacher approves the opinion of the pupils, yes, children! Of course, with human consciousness it is different from animals, which means that we must have a conscious attitude to animals-he may say, and can again address the pupil questions. For example, what animals do schoolchildren know? And the pupils can say cows, calves, sheep, goats, dogs, rabbits and other animals. The teacher shows the following pictures will ask more questions:



Kids! What do you see in these pictures?

-we see, a rabbit, a cat, a dog, a cow and a horse a teacher.

- Yeah, kids! Tell me, what color is the rabbit, what kind of animal is he?



-The color is yellow, it runs fast, fox always eats it.

-How about the animals in the next two pictures?

-Dog with a cat

-Are they friends with each other?

-They don't. They constantly fight with each other. The dog will chase the cat, and the cat will run away.

-How are the children's kittens in the picture? It's so thin, so small, What do we have to do with it?

Teacher, we must take care of him, take care of him.

-Yes, of course, we must take care of it and take care of it. Let's make a name for the cat: we put it as a Mittivoy or Moshkhon?

- Teacher, let's put it as Mittivoy.

-Why do we put it as Mittivoy?

- Teacher, because he is small, they can answer like this.



Note: students can also give undeniable answers to the questions they are being asked. For example, we do not put a Mittivoy, because we put a name on our cat as an Oppogoy-I can also say. said that the

teacher should not resist the student's knowledge and should approve his / her own opinion or the opinion of other children if he / she is giving different information. The most important thing for us is the growth of students' speech and their independent thinking, and of course, at the end of the lesson, the teacher will be able to express the speech of the students, to connect the speech and to the mountain in terms of grammar and syntax encourage them depending on the structure. Here we can use the following visual aids:

Motivation is considered a convenient way to evaluate students and motivate them to research, study. Because every pupil would like to get a good praise from his teacher and would like to strive for it. In such lessons, the teacher can use the technological map as follows:

Organizational unit:	5 min
a)greeting	1 min
b)checking presence	2 min
c)political minute	2 min
Main part:	35 min
a.consolidating the previous theme:	10 min
b.New theme:	15 min
c. consolidating new theme	10 min
Final part:	5 min
1)evaluation of students	3 min
2)hometask	2 min

The lesson parts described in blue on the technological map above are exactly the parts that correspond to the recommendations given above. Therefore, the teacher should pay special attention to these parts in the course of the lesson. A similar lesson is continued and the oral speech of the students is grown. In the above dialogue: caring, caring words and verbal understanding that small and dwarf words are synonymous with each other are passed and written in the dictionary notebooks.

If we pay attention to the conditions, then in the first place is given attention to the oral speech of the students, that is, the oral speech of the students is developed by reading and continuing. In subsequent terms, their thinking framework, that is, emphasizes the independent thinking of the students. It will serve to strengthen the knowledge of students on this topic by drawing to the bottom of the words that denote the action. Or take exercise 3 (subject: divided verbs and verbs) in the textbook for grade 3 of mother tongue: condition of exercise: read. Determine the verbs with and without division. Move. Draw two lines on the bottom of the verbs with and without divisions. Tell them the difference. Write "verbs" and verbs without.

"Ozoda is studying on the third grade. She is never late the lesson. Ozoda keeps school supplies well in order. She is doing homework independently. Ozoda helps others." [4]

This exercise also focuses on the comprehensive development of the students as above and the size of the exercise is also slightly expanded, taking into account the age characteristics and previous knowledge of the students.

## CONCLUSION

Basically, poems, proverbs, tongue twister are given texts in textbooks for the developing of children's oral speech. For example, tongue twister "in winter yogurt has hardened" that has elements that make the reader's speech first and the art of alliteration (alliteration is one of the types of poetic art, using the same sound at the beginning of the word melodic. this will attract the reader through the melody).

In conclusion, one of the factors that make a person like a person is speech. The more clearly it is, the more beautiful and charming the person will be. The teachers and educators' main goal is developing and formation of it.

## REFERENCES

1. *Resolution of the president of the Republic of Uzbekistan dated December 10, 2012 № 1875.*
2. *Alisher Navoi's article "Discussion Ul-Lokhugatayn" titled "Language is involuntary – Elga inattentive".*
3. *Fuzailov S, Ne'matova A, Kosimova K. Textbook for the 2nd Class of Secondary Schools "native language " 13-th edition, publishing house named after Chulpon-matbaa creative house, Tashkent-2016 85 page.*
4. *Fuzailov S, Khudoyberganova M, Yuldosheva Sh. Textbook for the 3rd Class of Secondary Schools "native language", 14-th edition of the textbook, "Teacher" publishing house-printing house, Tashkent-2016 Page 119.*
5. *Shaamirova Y. Text of lectures "methods of teaching mother tongue", Namangan, 2017*
6. *www.Ziyonet.uz*





# E-Commerce and Retail Business in Nigeria: A Study of Selected Small and Medium Scale Firms

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## **ABSTRACT**

*This study examines e-commerce and retail business in Nigeria. It is an assessment of some selected small and medium scale firms in Makurdi metropolis. Three (3) research questions/hypotheses guide the study. The study adopts a descriptive research design. The study sample population is made up of 50 respondents from 10 supermarkets. Structured questionnaire developed on four point-rating scale of strongly agree to strongly disagree was used to collect data from correspondents. A total of 50 copies of questionnaire distributed were completed and returned indicating a 100% return rate. Data analysis was done using simple table, mean, and analyzed using non-parametric simple percentages, while t-test statistical technique was used in confirming the stated hypotheses. The result showed that, there is low patronage of online stores due to lack of adequate knowledge of computer, low extent of trust by e-product/service providers and their customers and lack of adequate infrastructure. The paper recommended that the operators and staff of supermarkets should embark on more effective Information Technology (IT) training in order to enhance their performance; management of supermarkets should procure quality I.T gadgets that will enhance the adoption of e-commerce, ICT programs must be made compulsory in schools, to assist younger generations and to embrace e-commerce.*

**Keywords: E-commerce, Retail, and Business Performance**

## **INTRODUCTION**

Recent advancements in information technology have revolutionized the way we communicate and information is now accessible from virtually everywhere. The ability of the internet to bring together various races of people from different parts of the world has a huge potential for developing up-coming countries like Nigeria (Agbata, 2016).

The amount of information that is now available online has increased dramatically over the recent years, including trade and economic information. The level of commerce transactions conducted in Nigeria in the last three years has increased exponentially but, there is still a lot of improvement to be made. R

ainer and Legulski (2011) defined e-commerce as a process of buying, selling, transferring or exchanging of products, services and/or information via computer networks including the internet.

Schneider (2011) as cited in Niyom (2012) broadly classified the development of e-commerce into two stages – "first wave and second wave". First wave of e-commerce was adopted by large enterprises in USA with easy access to capital, primarily from external sources. These large companies firstly understood the possibilities that e-commerce, can offer and started exploring and developing them.

Second wave is characterized with the technological boom after 2001, with the mobile broadband development and increased speed of internet on low cost price. This was a prerequisite for development

and adoption of e-commerce from smaller companies using their internal resources. E-commerce has brought a lot of changes to the economics around the world and also to the way businesses are carried out these days.

According to Abdullahi (2016) e-commerce as a way of doing business has brought a lot of benefits, as organizations are accepting e-commerce as a way of expanding their markets, improving services to customers, cutting down cost and improving their productivity.

In spite of the global reach of e-commerce, going by the recent statistics released by the Nigerian Communication Commission (NCC), the number of internet subscribers in Nigerian telecommunication networks declined from 91,880,032 in December, 2016 to 91,274,446 in January, 2017, showing a decline of 605,586. This is one of the major reasons why the average shopper remains seemingly stuck in his largely traditional shopping methods (Ayogu, 2017).

The fact that research from developed countries could not be applied to developing countries like Nigeria, is not only reason of this study but also due to inadequate understanding of what drives e-commerce adoption by consumers in developing countries.

The main objectives of this study therefore are: To find out the level of awareness of e-commerce among operators of small and medium scale firm in Makurdi, Benue State; Nigeria, to examine the extent of trust between customers and e-commerce adoption in retail business; and to examine the state of infrastructure for e-commerce adoption in retail business.

Given these objectives, the following research questions are generated:

1. What is the level of awareness of e-commerce in retail business in Makurdi?
2. What is the extend of trust by customers and companies in e-commerce in retail business?
3. To what extent has infrastructure impacted on e-commerce in retail business?

### **Clarification of Terms**

To avoid confusion, it is pertinent to define three concepts as used here:

**E-commerce** - is a short term for electronic commerce. E-commerce is a transaction of buying or selling online.

**Retail** – is the activity of selling goods directly to the public usually in small quantities.

**Business** – refers to work relating to the production, buying and selling of goods or services.

### **REVIEW OF LITERATURE**

Electronic commerce according to Clinton, (2000) is defined as doing business electronically. It encompasses many diverse activities including electronic trading of goods and services, online delivery of digital content, electronic fund transfer, electronic shares trading, electronic bills of lading, commercial auctions, collaborative design and engineering online, public procurement, direct consumer marketing and after sales services. It involves both products (consumer goods, specialized medical equipment) and services (information services, financial and legal services). Chong (2008) also described e-commerce as a process of integration of all company's processes, activities and services

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toward buying and selling of products and exchange of information and funds with the company's partners via computer networks and electronic technologies.

Presently, many online shopping sites are thriving in Nigeria, serving thousands of searchers every week. Some of them are: [www.234world.com](http://www.234world.com), [Xtaples.net](http://Xtaples.net), [www.booksng.com](http://www.booksng.com), [www.orderbay.com](http://www.orderbay.com). Some of these sites make the transaction process so easy to make the buyers to forget about the open market. However, many Nigerians still treat its benefits with deep skepticism which is the focus of this study. Possible reasons for these results as well as directions for future research are presented.

### **Level of Awareness of E-commerce**

The cardinal point of vision 20:20:20 of the Federal Republic of Nigeria is that "by 2020, Nigeria will be one of the 20 largest economy in the world, able to consolidate its leadership role in Africa and establish itself as a significant player in the global economic and political arena (NV 2020).

According to Ribadu (2011) as cited in Agbonito (2010), a country determined to compete in the 21st century market by globalization, fiercely competing markets, job opportunities and rapid technological advance must have a commensurate infrastructure such as e-commerce to drive its vision.

**According to Ayo et al (2011) as cited in (Ani, Chukwemeka and Onyinye 2017):** despite the global popularity and growth of commerce, in the developed countries, developing countries like Nigeria seem to be lagging behind. however, as a developing country, ICT is growing gradually in Nigeria with internet users making up 16.1% of the total population (internet world stat. 2017). This shows a considerable increase compare to users in 2016, 3.1% of total population, with more people becoming computer literate and open to ICT.

Chukwuemeka; and Onyinye (2017) opined that about 70% of Nigerians surveyed had heard about e-commerce before, but only 32% had used it. This shows that only a very small percent of the sampled Nigerian actually used e-commerce (representing 22%). The full potential of e-commerce cannot be achieved when the level of awareness is low.

### **Extent of Trust**

Trust is a belief that one can rely upon a promise made by another. Stewart et al (2001) defines trust in electronic commerce as the subjective probability with which consumers believe that an online transaction with a web retailer will occur in a manner consistent with their expectations. Scholars have identified lack of trust as one of the main reasons to consumer's cynicism towards e-commerce. In the context of e-commerce, trust beliefs include the online consumers' beliefs and expectancies about trust-related characteristics of the online seller (Mcknight and Chervany, 2002). The online consumers desire the online sellers to be willing and able to act in the consumers' interest, to be honest in transactions (not divulging personal information to other vendors), and to be capable of delivering the ordered goods as agreed. Regrettably, online customers in Nigeria at present do not enjoy such benefits of human interaction and can only base their perceptions on vendor's website. Hence the need for trust in online environment is important as it is in physical interactions and influence the level of e-commerce practitioners.

The advent of e-commerce has placed a premium on the participating organizations or nations, in terms of provision of the basic infrastructure for a secured, seamless and trusted business environment through

the electronic media (Ay, 2006). There had been several efforts to boost the development of e-commerce infrastructure in Nigeria but with little result. One of such efforts is the bank recapitalization reform that led to the reduction from 89 weak banks in the country to 25 strong banks, with 12 of them being listed among the first one 1000 banks in the world, a feat that has never been achieved before (Soludo, 2007). Another is the telecoms reforms/deregulation among others that has made the country to be the fastest growing telecommunication in the world (Nigeria 2 days, 2007).

Ahmed (2015) added that the win project tagged "Wire Nigeria" was intended to provide ICT infrastructure to all the nooks and crannies of the country. The project includes the provision of VAST to the 774 local governments in the country and the installation of the necessary infrastructure particularly fibre optic backbone across the country.

Despite all these attempts, there is still lack of basic infrastructure such as steady power supply, good roads as well as limited access to telecommunication infrastructure and high cost of internet, all have hinder the growth of e-commerce in Nigeria (Adebayo and Raphael, 2013). Also, majority of business organization in Nigeria have not embraced e-commerce due to some factors such as lack of network infrastructure and insufficient knowledge about e-commerce technology. Hence there is a wide gap between the available infrastructure and the desired state of infrastructure for e-commerce as found in developed countries. More so, e-commerce is an urban phenomenon in Nigeria as the infrastructural deficiency of the rural areas is nothing to write home about. Infrastructure is very critical in all nook and crannies of both the urban and rural as this will popularize the adoption of e-commerce.

### **Methods of Data Collection**

The target population for this study consists of 50 staff of the ten (10) most popular supermarkets in Makurdi metropolis found online. The supermarkets are Comfort Ayamtse; Mobis; S.O Brothers, Zaron; Divine; Springs Superstor; Deligat; Togo, Officon Nig Ltd and Piz Ffores, all in Makurdi; Benue State, Nigeria.

Responses range from 2 to 7 entrepreneurs per supermarket. These ten Supermarkets were chosen because it was felt that the domain of business operations may influence e-commerce in retail business.

Questionnaires were administered personally to the 10 supermarkets selected across major parts of Makurdi town (i.e. North Bank, Wurukum, Wadata, High Level and Ankpa ward). 50 usable questionnaires provided the data base (a 100% response rate).

### **Validation of Instrument**

In research the term validity or reliability means repeatability or consistency measure could be considered reliable if it would give the same result over and again (Trochim, 2006). IN this study, the test-retest method of reliability was used by administering twenty copies of the questionnaire to expert in marketing that are not part of the sample of the study twice within two weeks and thereafter determine the coefficient of variation by using Pearson product moment correlation analysis.

### **Data Analysis Techniques**

Data collected were presented using tables, means score rating analyzed using non-parametric simple percentages, while the T-test statistical technique was used in confirming the stated hypotheses.

## Results

The analysis of our findings based on the questions raised in the preceding sections are presented thus.

**Table 1: Level of Awareness of E-commerce in Retail Business**

S/N	Questionnaire	$\bar{X}$	SD	DECISION
1	I am aware of online shopping stores e.g. jumia; OLX, etc	3.00	3.13	SA
2	Always purchase goods online	1.88	3.62	SD
3	I am familiar with payment instruments like ATM, Quick Teller, Mobile money etc	3.08	3.24	SA

**Source: Field Survey, 2018**

From the table, it can be observed that two items are highly rated. item 1 and 3 have mean scores of 3.00 and 3.08 with standard deviation of 3.13 and 3.24 respectively, while item 2 has mean rating of 1.88 with standard deviation of 3.62 respectively.

The result shows that the respondents are aware of online shopping stores and are also familiar with payment instruments such as ATM, Quick Teller, Mobile Money, etc, but do not always purchase goods online as indicated by low mean rating of 1.88. There is therefore high level of awareness of e-commerce but the patronage is low.

**Table 4.2.1 Mean and T-test Analysis of the Respondents on the level of awareness of E-commerce in Retail Business**

S/N	Questionnaire	X	SD	ALPHA	T-CAL	T-CEIT	DECISION
1	I am aware of online shopping stores e.g. Jumia, OIX, etc	3.00	3.13	0.05	3.04	1.99	Reject Ho
2	Always purchase goods online	1.88	3.62	0.05	2.01	1.99	Rejected Ho
3	I am familiar with payment instruments like ATM, Quick Teller, Mobile Money, etc	3.08	3.24	0.05	3.07	1.99	Reject Ho

**Source: Field Survey, 2018**

The result from the first hypothesis which states that there is no significant relationship between the level of awareness of e-commerce and this adoption in retail business is rejected. This is shown from fact that the calculated (t) on each item is greater than critical t (1.99) at the 0.05 level of significance. We accept the alternative and conclude that, the adoption of e-commerce depend to a large extent on the level of its awareness on the part of the people.



**Table 3: Response Pattern on Extent of Trust by Customers and companies in E-commerce in Retail Business**

S/N	Questionnaire	$\bar{X}$	SD	DECISION
4	E-products/services provider is trust worthy and honest	1.58	4.49	SD
5	E-product/service provider instills confidence in his customers	1.78	3.89	SD
6	E-product/service provider does not usually fulfill promises and commitment assumes	2.9	4.47	SA

Source: Field Survey, 2018

Result in table 3 shows that there is low extent of trust by customers and companies in e-commerce adoption as indicated by the low mean rating of items 4 and 5 i.e. 1.58 and 1.78 respectively while item 6 indicates a high mean rating of 2.9 which implies that the respondents strongly agreed that service provider does not usually fulfill promises and commitment assumes which in turns make the people to loose confidence in the e-commerce.

**Table 3.2.1: Mean and T-test Analysis on Extent of Trust by Customers and companies**

S/N	Questionnaire	$\bar{X}$	SD	ALPHA	T- CAL	T-CEIT	DECISION
4	E-product/service providers is trust worthy and honest	1.58	4.49	0.05	2.00	1.99	Reject Ho
5	E-product/service provider instills confidence in his customers	1.78	3.89	0.05	2.02	1.99	Rejected Ho
6	E-product/service provider does not usually fulfill promises and commitment assumes	2.9	4.47	0.05	7.04	1.99	Rejected Ho

Source: Field Survey, 2018

From the result in table 3 above, indicate that the null hypothesis of no significant relationship between customer trust and adoption of e-commerce in retail business is rejected given that the t-calculated on each item is greater than t-critical of 1.99 at 0.5 level of significance. Hence, the alternative hypothesis is accepted and conclude that the adoption of e-commerce depends to a large extent on the level of trust between customers and e-product/service providers.

**Table 4: Response Pattern on Extent of the impact of infrastructure in the adoption of E-commerce in Retail Business**

S/N	Questionnaire	$\bar{X}$	SD	DECISION
7	Adequate ICT facilities available	1.62	4.30	SD
8	Adequate network service is available	1.74	4.11	SD
9	The website meet my expectations	1.56	4.62	SD

Source: Field Survey, 2018



The above table reveals that item 7, 8 and 9 have mean rating of 1.62, 1.74 and 1.56 with standard deviation of 4.3, 4.11 and 4.62 respectively. The respondent strongly disagree that there exist adequate ICT facilities, network service, as well as the website to meet their expectations. We conclude therefore, there are inadequate infrastructure facilities for e-commerce business in Nigeria.

**Table 4.2.1: Mean and T-test Analysis on Extent of the Impact of infrastructure in the adoption of E-commerce**

S/N	Questionnaire	$\bar{X}$	SD	ALPHA	T- CAL	T- CEIT	DECISION
7	Adequate ICT facilities available	1.62	4.30	0.05	2.01	1.99	Reject Ho
8	Adequate networks service	1.74	4.11	0.05	2.03	1.99	Rejected Ho
9	The website meet my expectation	1.56	4.62	0.05	2.00	1.99	Rejected Ho

**Source: Field Survey, 2018**

From the above table, the mean rating show that infrastructure is not adequately available to any reasonable extent for e-commerce adoption. The fact that t-calculated on each item is greater than t-critical at 0.05 level of significant implies that the null hypothesis of no significant relationship between the state of infrastructure and e-commerce adoption in retail business is rejected. We accept the alternative hypothesis and conclude that the adoption of e-commerce largely depends on the state of infrastructure available for the platform.

### Conclusions and Recommendations

This work has examined e-commerce and retail business in Nigeria by assessing some selected small and medium scale firms. A total number of ten markets were used in this study. From the findings in this paper, the following conclusion can be draw:

That many people are aware of the existence of e-commerce but have not yet embraced it due to lack of adequate knowledge of computer.

The study equally discovered lack of adequate infrastructure that could support e-commerce platform.

Another conclusion that can be drawn on basis of the findings is the issue of trust and honesty. There is low extent of trust and honesty by customers and suppliers.

### Recommendations

Many SMEs in developing countries like Nigeria have not taken the advantage of the importance of electronic commerce adoption. These differences range from poor infrastructure, poor ICT education, lack of trust as well as dishonesty. Based on the aforementioned challenges, the study have recommended that:

1. Operators and staff of supermarkets should embark on effective information technology (IT) training in order to enhance their performance.
2. Also management of governments should procure quality IT gadgets that will enhance adoption of e-commerce .
3. In order to assist the younger generation, ICT must be made compulsory in schools, colleges and universities.

4. As SMEs are among the highest employers of labour, there is need for government at all levels to provide necessary infrastructure such as schools, computer literacy centers as well libraries to assist in the development of ICT and to enhance entrepreneurs' performance.
5. The concern for cyber crime, data security and privacy can only be handled and solved by strengthening the cyber frontier of the firm through ever-evolving and off-the-shelf, readily available technological tools and techniques that can be customized accordingly.

## REFERENCES

1. Adalikwu, C. (2012). *Challenges and opportunities in the implementation of Electronic Commerce: The case of Nigeria*. *African Journal of Business Management*, vol.6, (46) pp. 95-110.
2. Adebayor, S. (2014). *E-commerce Development in Nigeria*. *The Herald* Accessed on July 22, 2017.
3. Agbata, T. (2016). *Prospect and challenges of E-commerce in Nigeria*. *ICT Clinic Sunday Punch*, Feb. 7th, 2016.
4. Aghaunor, L. and Fotoh, X. (2006). *Factors Affecting the adoption of E-commerce in Nigerian School*. *Jonkoping Juniversity*, June, 2006.
5. Chong, S. (2008). *Success in E-commerce implementation – A cross Country study of Small and Medium sized Enterprises*. *Journal of Enterprises Information Management*. vol. 21, No.5, pp.468 – 469. *Classification According to Tasks, E-shopping (online)*. Available at: <http://encyclopedia.jrank.org/articles/pages/6600/Electronic.commerce.Technologies.Management.html>. Accessed 28 June, 2018.
6. Edesin, H. O. and Promise, E. K. (2012). *The problems and prospects of E-transaction: The Nigerian perspective*. *Journal of Research in International Business and Management*. (issn; 2251-0028) Vol.3(1) pp. 10-12.
7. Horst, S. (2013). *The World Economy*. (Online). Available at: <http://books.google.com.ng/books>. (Accessed on 31 March, 2013).
8. Maina, J. N. (2016). *Impact of Electronic E-commerce on Kenya Supermarkets: A Research Project Report submitted to International University, Nairobi*.
9. Rainer, R. K., Cegielski, C. G. (2013). *Introduction to information system: Enabling and Transformation Business (online)*. Available at: [Google Books. http://books.google.com.ng/books](http://books.google.com.ng/books). (Access 1st June, 2013).
10. Saluyigbe, A. S. (2012). *Adoption of E-commerce to Business Operations: A key to achieving Nigeria Vision 20;2020. A paper presented at 2012 National Conference on Nigeria; transformation and the vision 20:2020 policy of Fed. Govt. Ibadan, Nigeria*.
11. Tunede, K. (2014). *How E-commerce platform boosts SMEs*. Available at <http://dailyIndependentnig.com/2013/08/howE-commerceboostsSMEs>

# The Fundamental Issues Related to the Legal Control Mechanism of Protection of Plant Varieties and Farmers' Rights in India

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## ABSTRACT

*This research article discusses the fundamental issues related to the legal control mechanism of Protection of Plant Varieties and Farmers' Rights Act which was passed by the Indian Government in 2001. After India advanced toward becoming signatory to the Trade Related Aspects of Intellectual Property Rights Agreement (TRIPs) in 1994, legislation was required to be detailed. Article 27.3 (b) of this agreement requires the part countries to provide for protection of plant varieties either by a patent or by an effective sui generis framework or by any blend thereof. Therefore, the part countries had the decision to outline legislations that suit their own framework and India practiced this alternative. The current Indian Patent Act, 1970 avoided agriculture and plant strategies for production from patentability. The sui generis framework for protection of plant varieties was developed integrating the privileges of breeders, farmers and village communities, and taking care of the concerns for impartial sharing of advantages. The provisions of legislations for their effective implementations[1].*

## 1. OVERVIEW: IN INDIA

India, an emerging giant in the global economy, continues to rely upon the agricultural sector for food security and employment. Research and development in the agricultural sector, improved production technologies and the availability of high-yield varieties (including during the Green Revolution) energized a 350% or more development in agricultural production between 1950 and 2008. Even along these lines, plant varieties and farmers' rights in India have not received as much attention as industrial property rights. The Seeds Act 1966 merely laid down standards and procedures for the regulation of seed quality and did not envisage grant of proprietary rights. Further, the Patents Act 1970 does not provide patent protection for:

1. Discoveries; methods of agriculture or horticulture;
2. Plants and animals in entire or to a limited extent, including seeds, varieties and species; and essentially biological processes for the production or propagation of plants.

However, awareness of plant varieties has increased in developed countries. The Agreement on Trade-Related Aspects of Intellectual Property Rights, marked by India in 1994, requires protection of plant varieties through patents, an effective sui generis system or any combination thereof. Consequently, an effective system in India for the protection of plant varieties and the rights of farmers and plant breeders was considered necessary – specifically, in order to:

1. Encourage the development of new plant varieties;
2. Accelerate agricultural development; and
3. Facilitate the availability of high-quality seeds and planting material for farmers of India.

To meet these objectives, the Protection of Plant Varieties and Farmers' Rights Act was introduced, providing integrated protection to both plant varieties and farmers' rights. Although the legislation was

enacted in 2001, its provisions came into force in 2005 and 2006. To implement the act, the Protection of Plant Varieties and Farmers' Rights Rules 2003 were enacted.

### **1.1 UPOV: AN INTERNATIONAL [2]**

The International Union for the Protection of New Varieties of Plants (UPOV) Convention was adopted in Paris in 1961. It was subsequently revised in 1972, 1978 and 1991. Although India has not acceded to UPOV, Indian legislation to a great extent takes after the framework of the 1978 revision and borrows certain elements from the 1991 revision. UPOV makes breeders' rights a priority of policy making and does not provide for the concept of farmers' rights[2].

UPOV aims to provide a sui generis form of intellectual property protection system specifically intended to reflect the particularities of breeding, cultivation and use of new varieties of plants. To be eligible for protection, plant varieties, must be novel, distinct, stable and uniform[3]. UPOV recently conducted an examination on the impact of the introduction of plant variety protection systems in selected UPOV member states to be specific Argentina, China, Kenya, Poland and the Republic of Korea. After the introduction of a plant variety protection system, the following were observed in the respective countries:

1. An overall increase in the numbers of varieties being developed
2. Such protected varieties displayed increased performance
3. More foreign varieties were introduced (i.e. application by foreign plant breeders)

In addition to the UPOV Convention, other international instruments also relate to intellectual property rights on genetic resources including: the Agreement on Trade Related aspects of Intellectual Property Rights (TRIPs), the Convention on Biological Diversity (CBD) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). This complexity presents a significant challenge for some developing countries to engage in these for in a coherent manner.

### **2 OBJECTIVES OF THE STUDY [4]**

- To explain the plant varieties in India along with it farmers'' issues.
- To elaborate legal mechanism for the farmers'' act and plant protection.
- To provide for the establishment of an effective system for protection of plant varieties.
- To explores proprietary claims to plant genetic resources (PGRs).
- To provide for the rights of farmers, plant breeders'' right and researcher rights.
- To stimulate investment for research and development and to facilitate development of the seed industry.
- To guarantee availability of high quality seeds and planting materials of enhanced varieties of plants to farmers.

### **3 CHALLENGES**

The Protection of Plant Varieties and Farmers'' Rights Act is progressive in that it endeavors to distribute rights equitably between several sectors. However, certain provisions require serious reconsideration in order to achieve the underlying legislative intent.

The law directs revenue into the National Gene Fund, but the issue remains of how those funds can best be used. It has been advocated that farming communities should collectively access the revenue deposited in the National Gene Fund and determine suitable avenues of expenditure, except where an

identifiable farmer's variety has been used. Further, a clear procedure for determining and realizing benefit sharing must be laid down. Although the act acknowledges and provides for the registration of farmers' rights, farmers depend on the Protection of Plant Varieties and Farmers' Rights Authority for benefit sharing and compensation claims.

In cases where the propagating material is not in line with the disclosed information, the determination of compensation should not be left to the sole discretion of the authority; it should be based on actual loss, factoring in the projected harvest value of the crop. Further, a review of the trends in plant variety applications reveals that the private sector has largely focused on hybrid crops and there is a need to incentivize investment in other crops. In terms of infrastructure, the Plant Varieties Protection Appellate Tribunal envisaged under the act is yet to be constituted – indeed, the transitional provision empowering the IP Appellate Board to exercise the jurisdiction of the tribunal (with the appointment of a technical member) has not yet taken shape.

#### 4 PLANT VARIETIES [5]

A variety is a plant grouping inside a single botanical taxon of the lowest known rank, defined by the expression of the characteristics coming about because of a given genotype or combination of genotypes.

##### 4.1 Registerable Plant Varieties in India

**1. New Varieties:** A Variety which isn't in public domain in India earlier than one year before the date of filing or outside India, for the situation of trees or vines earlier than six years or in some other case earlier than four years.

**2. Extant Variety:** A Variety which is advised under Seed Act, 1966 or a variety about which there is common knowledge or a farmer's variety or whatever other variety which is in public domain is considers as an Extant Variety.

**3. Farmer's Variety:** A Variety which has been traditionally cultivated and developed by the farmers in their fields or a variety which is a wild relative or land race of a variety about which farmers have common knowledge.

##### 4.2 Essentially Derived Variety (EDV)

1. Predominantly derived from such initial variety, or from a variety that itself is predominantly derived from such initial variety, while retaining the statement of the fundamental characteristics that result from the genotype or combination of genotypes of such initial variety.
2. Is plainly distinguishable from such initial variety; and
3. Conforms to such initial variety in the expression of the basic characteristics.

##### 4.3 Non-Registerable Plant Varieties in India

All plant varieties can't get legal protection in India. Certain Plant varieties are rejected from the protection under PPVFR Act 2001. Any variety where aversion of commercial exploitation of such variety is necessary to secure public order or public morality or human, animal and plant life and health or to keep away from serious prejudice to the environment or any varieties which has terminator technology or any variety belonging to the species or genera which isn't recorded in the notification issued by the Central Government can't be registered for the protection under the Act.



## 5 ELIGIBILITY CRITERIA FOR PROTECTING A PLANT VARIETY [5]

The plant variety must be: **Distinct:** A variety should be clearly distinguishable by no less than one basic characteristic from existing Uniform: A Variety must be sufficiently uniform in its fundamental characteristics. **Stable:** Essential characteristics of a variety must be steady after repeated propagation or for the situation of a specific cycle of propagation toward the finish of each cycle.

## 6 MECHANISM FOR APPLY THE REGISTRATION OF A PLANT VARIETY [5]

1. To any person claiming to be the breeder of the variety;
2. To any person being the Assignee or the breeder of the variety in respect of the right to make such application;
3. To any farmer or group of farmers or community of farmers claiming to the breeder of the variety;
4. To any person authorized to make application on behalf of farmers; and
5. To any university or publicly supported horticultural institution claiming to the breeder of the variety.

## 7 CURRENT STATUS OF APPLICATIONS IN INDIA

The plant variety registration procedure was initiated in 2007. Out of 10,998 applications filed for protection from 21 May 2007 to 10 February 2017, the majority were filed by farmers (6,322), followed by private entities (3,204). While 1,470 applications were filed by public organizations, only two were filed by individual breeders.

Regarding categories of application, typical varieties constituted the majority (8,102 applications). Some 1,428 applications were filed in respect of hybrid varieties, of which the private sector contributed the most. Regarding types of variety, more than half (6,315) were filed for farmers' varieties. The applications filed for extant varieties totaled 2,401, a little ahead of applications filed for new varieties (2,103). The fewest applications were filed for essentially derived varieties (179).

A study of crop groups reveals that most applications (6,459) were filed for cereal crops, of which 4,913 pertained to rice. Other major cereal crops for which applications were filed include maize, sorghum and wheat. The fewest applications were filed for trees (two). Commercial interest in developing flowers and plantation crops appears to be negligible, with 26 and 23 applications, respectively. Tetraploid cotton has drawn the maximum private investment, with 962 applications filed by private entities.

## 8 STATES OF RIGHTS

**Breeders' Rights:** The certificate of registration for a variety issued under this Act should give an exclusive right on the breeder or his successor or his agent or licensee, to produce, sell, market, distribute, import or export of the variety [Section 28 (1)].

**Farmers' Rights:** The farmers' rights of the Act define the privilege of farmers and their right to ensure varieties developed or conserved by them [Chapter V]. Farmers can spare, utilize, sow, resow, exchange, offer and sell cultivate produce of an ensured variety aside from deal under a commercial marketing arrangement (branded seeds) [Section 39 (1), (I)–(iv)].



**Researchers' Right:** The researchers have been provided access to secured varieties for bonafide research purposes [Section 30].

### **Protection of Plant Varieties and Farmers' Rights Authority**

The Protection of Plant Varieties and Farmers' Rights Act establishes the Protection of Plant Varieties and Farmers' Rights Authority, responsible for:

1. Registering varieties;
2. Providing measures for the development of new varieties;
3. Considering applications for compulsory licensing; and
4. Protecting the rights of farmers and breeders.

### **Duration of Protection for a Registered Plant Variety**

**Trees and Vines:** 18 Years Other crops: 15 Years.

**Extant Varieties:** 15 Years from the date of notification of that variety by the Central Government under Seed Act, 1966.

### **Exemptions Provided Under the Act**

**Farmers Exemption:** Farmer might be entitled to produce, save, use, sow, resow, exchange, offer or sell his farm produce including seed of a variety secured under this Act.

**Researchers Exemption:** Researchers are allowed to (i) use the registered variety for conducting test (ii) use the variety as an initial source of variety for the purpose of creating different varieties.

### **Plants That Are Covered Under the PPVFR Act**

As of now following 18 plant species can be registered under the Act.

**1. Cereals:** Rice, Wheat, Maize, Sorghum, Pearl Millet.

**2. Legumes:** Chickpea, Mungbean, Urdbean, Field Pea, Rajmash, Lentil, Pigeon Pea.

**3. Fibre Crop:** Four species of cotton namely *Gossypium Arboreum* L. and *G. Herbaceum* L. (Diploid Cotton) and *G. Barbadense* L. and *G. Hirsutum* L. (Tertaploid Cotton) Two species of Jute (*Corchorus Olitorius* L. and *C. Capsularis* L.)

### **Infringement and Penalties**

A right established under the Protection of Plant Varieties and Farmers' Rights Act is infringed when an unauthorized party:

1. Sells, exports, imports or produces a registered variety; or
2. Uses, sells, exports, imports or produces any other variety while giving it a denomination that is identical or deceptively similar to that of a registered variety, so as to cause confusion among the general public.

Further, penalties have been prescribed for:

1. Falsely applying the denomination of a registered variety;
2. Selling varieties to which false denominations have been applied; and
3. Falsely representing a variety as registered.

The act prohibits an innocent farmer from being held liable for infringement.

### **Compulsory Licenses**

A holder of a PBR has a limited period within which to exercise a sole right. A sole right means that the holder may undertake any activity in respect of the variety without issuing any licenses to a third party. Upon expiration of the sole right period he may issue licensing. If the holder unreasonably refuses or imposes unreasonable conditions for the issuance of such a license, the Registrar may issue a compulsory license. Such a compulsory license would only be issued when the Registrar is satisfied that the holder of the right is imposing unreasonable conditions on the issuance of a license, that the reasonable requirements of the public in terms of access to the variety is not being satisfied or will not be satisfied.

Currently, there is no guidance to the Registrar as to what would constitute "unreasonable refusal", "unreasonable conditions" as well as "reasonable requirements of the public".

## **8 CONCLUSION AND SUGGESTIONS**

In line with its obligations under the act, the authority has established the Plant Varieties Registry, the National Gene Bank, a network for DUS testing and a database of varieties in common knowledge. It has also established a „farmers“ cell“ to provide assistance to farmers in connection with registration of their varieties and undertake training and awareness programmes. The charge for registration and different processes as well as yearly expense should be reasonably decided keeping in see the possible business estimation of the crop, the national interests, and the desirability of generating enough re-sources for money related independence of the Authority. Section 19 of the Act requires a breeder to submit an amount of seeds alongside 'parental lines' according to the standards specified by the regulations. Also, the seeds deposited are to be conserved and regenerated if necessary for DUS testing for maintenance. A separate expense might be assigned for conservation and regeneration, besides a testing charge.

There is a requirement for the effective and coordinated implementation of various new acts/bills concerning biodiversity, condition and seed, which have some interphases because of the common item that is the 'seed'. These are in the territory of benefit-sharing mechanisms for conservers of agro-biodiversity and the establishment of a store for claims of benefit sharing.

## **REFERENCES**

- [1]. Pratibha B., SanjeevSaxena and B. S. Dhillon, (2004) "The Protection of Plant Varieties and Farmers“s Rights Act of India"Current science, Vol. 86, No. 3.
- [2]. Laurence R. Helfer, (2004) Intellectual Property Rights in Plant Varieties; International legal regimes and policy options for National Governments, Development law Service, FAO Legal Office.
- [3]. Jordens, R., (March 2011) Effective System of plant Variety Protection in Challenges of a Changing World: UPOV perspective, Journal of intellectual Property Rights, Vol. 16, pp.74-83.
- [4]. Kochupillai, M. (March 2011) The Indian PPV&FR Act, 2001: Historical and Implementation Perspectives, Journal of Intellectual Property Rights, Vol. 16, pp.88-101.
- [5]. Sastry, R.K. Protection of Plant Varieties and Farmers“ Right Act- A Critical Analysis, PG Diploma in Patents Law, Project Assignment (2003-4).

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