

## **PREFACE**

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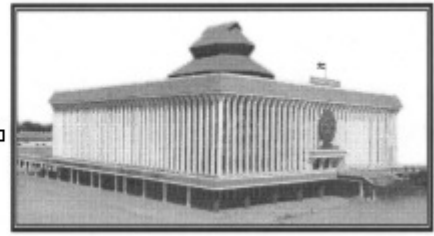
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**സാമ്പത്തിക വികസനവും ജലവിഭവ മാനേജ്മെന്റും**

**സച്ചിദാനന്ദ മുഖർജി**

2002-03 മുതൽ 7.28 ശതമാനം എന്ന ഉയർന്ന ശരാശരി വാർഷിക സാമ്പത്തിക വളർച്ച ഇന്ത്യ നിലനിർത്തി പോരുന്നു. സ്ഥിര മൂലധനത്തിന്റെ (മനുഷ്യ ജന്യ മൂലധനത്തിന്റെ) മാത്രമല്ല പ്രകൃതി വിഭവങ്ങളുടെയും ഉപഭോഗത്തിന്റെ പിന്തുണ കൊണ്ടുകൂടിയാണ് ഈ വളർച്ച.

സാധനങ്ങൾക്കും സേവനങ്ങൾക്കും പുറമെ ഉത്പാദനത്തിന്റെയും ഉപഭോഗത്തിന്റെയും നടപടിക്രമങ്ങളും പ്രകൃതിയിലേക്കു (വായു, വെള്ളം, ഭൂമി) വലിച്ചെറിയപ്പെടുന്ന പാഴ് വസ്തുക്കളും മലിനീകരണം സൃഷ്ടിക്കുന്നു. ജനസംഖ്യാഭാരം പരിസ്ഥിതിയുടെ ആഗിരണശേഷിക്കു താങ്ങാനാവുന്നതിനപ്പുറമാകുമ്പോൾ അത് പരിസ്ഥിതിയുടെ അധഃപതനത്തിന് ഇടയാക്കുന്നു. വായുവിന്റെയും വെള്ളത്തിന്റെയും മലിനീകരണം, മണ്ണിന്റെ ഗുണനിലവാരത്തകർച്ച, ഒരു ഉത്പാദനഘടകമെന്ന നിലയിൽ പരിസ്ഥിതി നൽകുന്ന വിലമതിക്കാനാകാത്ത സേവനം (ഉദാ: മലിനീകരണ ആഗിരണം) തുടങ്ങിയവ ഇന്നത്തെ ദേശീയ അക്കൗണ്ട്സ് സമ്പ്രദായത്തിന് (System of National Accounts - SNA) കീഴിൽ വേണ്ട രീതിയിൽ കണക്കാക്കപ്പെടുന്നതേയില്ല. തന്മൂലം ഇന്ത്യൻ സമ്പദ്വ്യവസ്ഥയിൻമേലുള്ള അതിന്റെ യഥാർത്ഥ പാരിസ്ഥിതികാഘാതം മനസ്സിലാക്കുക പ്രയാസകരമാണ്. മറ്റൊരുതരത്തിൽ പറഞ്ഞാൽ ആഭ്യന്തരോത്പാദനത്തിൽ (GDP) ജലം (ആഗിരണവും നിലവാരത്തകർച്ചയും) പോലെയുള്ള പ്രകൃതിവിഭവങ്ങളുടെ സംഭാവന അക്കൗണ്ടു ചെയ്യപ്പെടുന്നില്ലെന്നു തന്നെയല്ല ദീർഘകാലാടിസ്ഥാനത്തിൽ ഉയർന്ന സാമ്പത്തിക വളർച്ച നേടാനുള്ള സാധ്യതകളേയും സാമ്പത്തിക വികാസത്തേയും (ആരോഗ്യ ചെലവുകൾ അടിച്ചേൽപ്പിച്ചും മറ്റും) പരിമിതപ്പെടുത്തുന്നു. പൊതുജനാരോഗ്യ പ്രശ്നങ്ങളും പാരിസ്ഥിതിക നിലവാരത്തകർച്ച മൂലമുണ്ടാകുന്ന



ഉപജീവനമാർഗ്ഗനഷ്ടവും ജനസംഖ്യയുടെ നല്ലൊരു വിഭാഗത്തിനും കൃഷി, മൃഗ സംരക്ഷണം ഫിഷറീസ് (മീൻപിടിത്തവും മറ്റും തുടങ്ങിയ പ്രാഥമിക മേഖലകളെ ആശ്രയിച്ചു ജീവിക്കേണ്ടി വരുന്ന ഇന്ത്യയെപ്പോലെയുള്ള വികസ്വരരാഷ്ട്രങ്ങൾക്ക് കടുത്ത ആശങ്ക ഉളവാക്കുന്നതാണ്. ഇന്ത്യയിലെ ജനസംഖ്യാവളർച്ചയും ചോദന വർദ്ധനയും മൂലം പ്രകൃതി വിഭവങ്ങളുടെ ഉറവിടമെന്ന നിലയിൽ പരിസ്ഥിതിയിൻമേലുള്ള ആശ്രിതത്വം കൂടുതൽ വർദ്ധിക്കുന്നു. പ്രാദേശികമായ പരിസ്ഥിതിക പ്രശ്നങ്ങൾക്കപ്പുറം 30 കോടി വരുന്ന തീരദേശവാസികളുടെ ദുരിതങ്ങൾ വർദ്ധിക്കാൻ താൽക്കാലികവും ദീർഘകാലാടിസ്ഥാനത്തിലുള്ളതുമായ കാലവർഷ വ്യതിയാനങ്ങൾ, ഹിമകൊടുമുടികളുടെ ഭ്രംശം എന്നിങ്ങനെ പലതും കാരണമാവുകയും അത് സാമൂഹ്യ സാമ്പത്തിക വികാസത്തിന് ഹാനികരമായിത്തീരുകയും ചെയ്യുന്നു.

ജലസുരക്ഷ മാത്രമല്ല സാമ്പത്തിക വളർച്ചയുടെയും മാനവ വികാസത്തിന്റെയും നേട്ടത്തെ സ്വാധീനിക്കുന്നത് വിവിധ മേഖലകളിലെ ജലത്തിന്റെ ഉപഭോഗനിലവാരം, ജലപരിസ്ഥിതിയുടെ അവസ്ഥ എന്നിവയാണ്. ജലമേഖലയിലെ സാങ്കേതികവും സ്ഥാപനപരവുമായ ശേഷി കാണിക്കുന്നത് ജലനിലവാരം മെച്ചപ്പെടുത്തണമെന്നാണ്. അതായത് ജല പദ്ധതികളിൽ നിക്ഷേപിക്കുന്നതിലൂടെ ജല ഉപഭോഗത്തിന്റെ പ്രാപ്യത മെച്ചപ്പെടുത്തൽ, സ്ഥാപനവൽകരണം, കാലികമായ നയരൂപീകരണം ഇവയ്ക്കെല്ലാം രാജ്യത്തിന്റെ സാമ്പത്തിക വളർച്ചയെ പ്രോത്സാഹിപ്പിക്കാൻ കഴിയും എന്നാണ്. ഈ പഠനം ചൂണ്ടിക്കാട്ടുന്ന മറ്റൊരു കാര്യം ജലസംബന്ധമായ പ്രശ്നങ്ങൾ പരിഹരിക്കുന്നതിന് സാമ്പത്തിക വളർച്ച ഒരു മുൻ ഉപാധി അല്ലെന്നാണ്. പകരം, മാനവ വികസനവും സ്ഥായിയായ സാമ്പത്തികവികസനവും നേടിയെടുക്കാൻ രാജ്യങ്ങൾ ജല അടിസ്ഥാന സൗകര്യങ്ങളിലും സ്ഥാപനവൽകരണത്തിലുമായി നിക്ഷേപിക്കണമെന്നാണ്. വിശകലനങ്ങൾ കാണിക്കുന്നത് വരണ്ടതും ചൂടേറിയതുമായ ഉഷ്ണമേഖലാ രാജ്യങ്ങളിൽ വലിയ ജലസംഭരണികൾക്ക് പണം മുടക്കുന്നത് സാമ്പത്തിക വളർച്ചയെ സഹായിച്ചു എന്നാണ്. അതിലുപരി പോഷകാഹാരക്കുറവും ശിശുമരണ സംഭവങ്ങളും കുറയ്ക്കാൻ ഇത് സഹായിച്ചതായും കാണുന്നു.

ലോക സാമ്പത്തിക ഫോറം (World Economic Forum) അതിന്റെ 2016 ലെ ആഗോള അപകടസാധ്യതാ റിപ്പോർട്ടിൽ (Global Risks Report 2016) പറയുന്ന ആഘാത സാധ്യത കണക്കിലെടുത്താൽ ഏറ്റവും വലിയ ആഗോള അപകട സാധ്യതാ പട്ടികയിലാണ് ജല പ്രതിസന്ധിയെ പെടുത്തിയിരിക്കുന്നത്. ഭൗതികം, സാമ്പത്തികം, പരിസ്ഥിതിപരം (ജലഗുണമേന്മയു



മായി ബന്ധപ്പെടുത്തി) എന്നിങ്ങനെ നിരവധി മാനങ്ങളാണ് ജലദൗർലഭ്യത്തിനു ഉള്ളത്. വർദ്ധിച്ചുവരുന്ന ജനസംഖ്യാ സമ്മർദ്ദം, വൻതോതിലുള്ള നഗരവത്കരണം, ഉയർന്ന സാമ്പത്തിക ഇടപാടുകൾ, മാറുന്ന ഉപഭോക്തൃ രീതികൾ, ജീവിത നിലവാരം മെച്ചപ്പെടുത്തൽ, കാലാവസ്ഥ വ്യതിയാനം, സംയോജിത കൃഷിയുടെ വികാസം, കൂടുതൽ ജലം ആവശ്യമുള്ള ഇനം വിളകളിലേക്കുള്ള കൃഷിരീതികളുടെ മാറ്റം എന്നിവ ജലത്തിന്റെ ഡിമാന്റ് (ചോദനം) ഉയരുന്നതിന് ഇടയാക്കുന്ന പ്രധാന കാരണങ്ങളിൽപ്പെടുന്നു. കഴിഞ്ഞ ഏതാനും പതിറ്റാണ്ടുകളായി നിരന്തരം വർദ്ധിച്ചുവരുന്ന ശുദ്ധജലത്തിന്റെ ആവശ്യകതയും കാലികമായുള്ള അതിന്റെ ലഭ്യതയും പരിശോധിച്ചാൽ ജലദൗർലഭ്യം വ്യക്തമാകുന്നതാണ്. ജലദൗർലഭ്യത്തിന്റെ ഉറവിടം തന്നെ അതിന്റെ കാലികവും ഭൂമിശാസ്ത്രപരവുമായ ലഭ്യതയും ആവശ്യകതയും തമ്മിലുള്ള ചേർച്ചയില്ലായ്മയാണ്. ജല ദൗർലഭ്യത്തിന്റെ ആഘാതത്തെ സാമൂഹ്യം, പാരിസ്ഥിതികം, സാമ്പത്തികം എന്നീ ആഘാതങ്ങളായി അളക്കാൻ കഴിയുന്നതാണ്. ജലലഭ്യതയുടെ വാർഷിക കണക്കെടുപ്പ് ആ വർഷത്തിനുള്ളിലെ ലഭ്യതാ വ്യതിയാനങ്ങൾ പ്രതിഫലിപ്പിക്കില്ലെന്നതിനാൽ തന്നെ ജലദൗർലഭ്യത്തിന്റെ സാമൂഹ്യവും സാമ്പത്തികവുമായ പ്രത്യാഘാതം അളക്കുന്നതിന് അപര്യാപ്തമാണ്. ജനങ്ങൾ തിങ്ങിപ്പാർക്കുന്ന ഇടങ്ങളിലോ വൻതോതിൽ ജലസേചനം നടത്തുന്ന ഇടങ്ങളിലോ ആണ് കടുത്ത ജലദൗർലഭ്യം നിലനിൽക്കുന്നത്. ഇന്ത്യയിലെ ഗംഗാതടത്തിൽ ജലവിനിയോഗത്തിന്റെ ആവശ്യകതയും ജല ലഭ്യതയും വിപരീതദിശയിലാണ്. ജലവിനിയോഗത്തിന്റെ ആവശ്യകത അതിന്റെ ഉയർന്ന അവസ്ഥയിലായിരിക്കുമ്പോൾ ജല ലഭ്യത അങ്ങേയറ്റം താഴ്ന്നിരിക്കും. 1996 മുതൽ 2005 വരെയുള്ള കാലത്തെ പ്രതിമാസ ലഭ്യത സംബന്ധിച്ച അടുത്തയിടെ നടന്ന ഒരു കണക്കെടുപ്പ് പ്രകാരം ആഗോളതലത്തിൽ 400 കോടി ജനങ്ങൾ വർഷത്തിൽ ഒരു മാസമെങ്കിലും കടുത്ത ജലക്ഷാമം നേരിടുന്നവരാണ്. ഇതിന്റെ നാലിലൊന്ന് (നൂറുകോടി ജനങ്ങൾ) ഇന്ത്യക്കാരാണ്. അതേസമയം ലോകത്തിലെ 50 കോടി ജനങ്ങൾ വർഷം മുഴുവൻ കടുത്ത ജലക്ഷാമം നേരിടുന്നവരാണ്. ഈ 50 കോടിയിൽ 18 കോടി ജനങ്ങൾ ഇന്ത്യയിൽ ജീവിക്കുന്നവരാണ്. ഇന്ത്യൻ സാഹചര്യങ്ങളിലെ ജല ദൗർലഭ്യത്തിന്റെ കാഠിന്യത്തെയാണ് ഇത് അടിവരയിടുന്നത്.

ജലം വൻ തോതിൽ ഉപയോഗിക്കുന്നവരെന്ന നിലയിൽ ജലദൗർലഭ്യം ജലസേചിത കൃഷിക്കും ആഘാതമുണ്ടാക്കുന്നു. ദൗർലഭ്യത്തിന്റെ കാഠിന്യമനുസരിച്ച് കൃഷിക്കുമേലുള്ള പ്രത്യാഘാതം വർദ്ധിക്കുന്നു. വിളവെടുപ്പിലുണ്ടാകുന്ന കുറവോ കടുത്ത വരൾച്ചാ സാഹചര്യങ്ങളിലുണ്ടാകുന്ന കൃഷിനാശമോ കർഷ





കരുടെ ജീവസന്ധാരണത്തെയാണ് പ്രതികൂലമായി ബാധിക്കുക. ജലദൗർലഭ്യം മൂലമുണ്ടാകുന്ന ജീവസന്ധാരണ പ്രതിസന്ധി എല്ലാ കർഷകർക്കും ഒരു പേലെ ആയിരിക്കില്ല. സാമൂഹ്യ-സാമ്പത്തിക സാഹചര്യങ്ങളോടും വെള്ളം വറ്റിപ്പോയേക്കാവുന്ന സാഹചര്യങ്ങളോടും ശാന്തമായും പൊരുത്തപ്പെട്ടും പോകാനുള്ള കർഷകരുടെ ശേഷിയും സാമ്പത്തിക ക്ഷമതയും അനുസരിച്ചായിരിക്കും അത്. തരിശോ അർദ്ധ തരിശോ ആയ ഭൂമിയിൽ കൃഷി ചെയ്യേണ്ട വിളവു സംബന്ധിച്ച തെരഞ്ഞെടുപ്പിന് ജലദൗർലഭ്യവുമായുള്ള പൊരുത്തപ്പെടലിൽ ഒരു പ്രധാന പങ്ക് വഹിക്കാനുണ്ട്. കൃഷി തുടങ്ങും മുമ്പു തന്നെ ജലലഭ്യത, വരൾച്ച വന്നേക്കാനുള്ള സാധ്യത എന്നിവ സംബന്ധിച്ച വിവരം കർഷകർക്കു നൽകുന്നത് ശരിയായ വിള തെരഞ്ഞെടുക്കാനും ജല ദൗർലഭ്യ പ്രതിസന്ധിയെ നേരിടാനും കർഷകരെ പ്രാപ്തരാക്കുന്നു. ബഹുവിധ ജീവസന്ധാരണ രീതിയാണ് സാഹചര്യങ്ങളോട് ഇണങ്ങിച്ചേരാനുള്ള ഏറ്റവും നല്ല മാർഗ്ഗം. ജീവസന്ധാരണത്തിനായി കൃഷിയെ മാത്രം ആശ്രയിക്കാത്ത കർഷകർക്ക് വരൾച്ചാ സാഹചര്യങ്ങളുമായി പൊരുത്തപ്പെടാൻ കഴിയും. കാർഷിക മേഖലയിൽ നിന്നുള്ള വരുമാനത്തകർച്ച സമ്പദ്വ്യവസ്ഥയുടെ എല്ലാ മേഖലകളിലേക്കും ബാധിക്കും. വരൾച്ചയുടെ ആഘാതം കടുത്തതാണെങ്കിൽ അതുമൂലമുണ്ടാകുന്ന ഭക്ഷ്യ വിലവർദ്ധന പണപ്പെരുപ്പത്തിലേക്കും നയിക്കും. ജലദൗർലഭ്യം വരുമാനത്തിലെ അസമത്വം വർദ്ധിപ്പിക്കുകയും സാധനങ്ങളുടെയും സേവനങ്ങളുടെയും ചോതനം കുറയുന്നതിലേക്ക് നയിക്കുകയും ചെയ്യും. കാലക്രമേണ ഇത് പൊതുമാനുഷ്യത്തിലേക്കു വരാനും നയിക്കുക.

ഉത്പാദന സേവന മേഖലകളിൽ ജലദൗർലഭ്യം ഉണ്ടാകുന്ന ആഘാതം അതാതിന്റെ ഉപഭോഗ തീവ്രതക്കനുസരിച്ച് വ്യത്യാസപ്പെട്ടിരിക്കും. ഉത്പാദന മേഖലയിൽ ജലത്തെ കൂടുതലായി ആശ്രയിക്കുന്ന വ്യവസായ പ്രക്രിയകളായ തുണിവെളുപ്പിക്കൽ, ചായം മുക്കൽ, പശുപ്പും കടലാസും നിർമ്മിക്കൽ, തുകൾ സംസ്കരണം, പാനീയങ്ങളും ഭക്ഷ്യസംസ്കരണവും പോലെയുള്ളവയ്ക്ക് ജലദൗർലഭ്യത്തിന്റെ ആഘാതം പരമാവധി നേരിടേണ്ടിവരുമെന്ന് കണക്കാക്കപ്പെടുന്നു. സേവനമേഖലകളിൽ ഏറെ പ്രത്യാഘാതം നേരിടുക ആരോഗ്യ സേവന മേഖലയിലും നിർമ്മാണ-റിയൽ എസ്റ്റേറ്റ് മേഖലയിലും ആയിരിക്കും. ദക്ഷിണേന്ത്യയിലെ തുണി വ്യവസായത്തിനായി (വെളുപ്പിക്കലും ചായം മുക്കലും) സമീപ ഗ്രാമങ്ങളിൽ നിന്നും ടാങ്കുകളിലെത്തിക്കുന്ന വെള്ളം വാങ്ങുകയാണ് ചെയ്യുന്നത്. കൃഷിയെ അപേക്ഷിച്ച് വളരെ കുറച്ച് വെള്ളം മാത്രമേ വ്യവസായങ്ങൾ ഉപയോഗിക്കുന്നുള്ളുവെങ്കിലും വ്യവസായിക മലിനജലം മണ്ണിലേക്കോ ജലോപരിതലത്തിലേക്കോ ഒഴുക്കിവിടുന്നത് ജലസ്രോതസ്സുകളെ മറ്റാവശ്യങ്ങൾക്ക്



ഉപയോഗിക്കാൻ പറ്റാതാക്കുന്നു. വ്യവസായ യൂണിറ്റുകൾ മലിനീകരണനിയന്ത്രണത്തിനായി തുക മാറ്റി വയ്ക്കാതിരിക്കുന്നത് വഴി ഉദ്പാദന യൂണിറ്റിന് വ്യവസായമലിനീകരണ നിയന്ത്രണത്തിനുള്ള നിർദ്ദിഷ്ട നിലവാരം പുലർത്താനാവതെ വരുകയും ആ ചെലവ് പൂർണ്ണമായും സമൂഹത്തിന്റെ മേൽ ചുമത്തപ്പെടുകയും ചെയ്യുന്നു.

സുരക്ഷിതമായ കുടിവെള്ളം ലഭ്യമാക്കേണ്ടത് മനുഷ്യന്റെ ക്ഷേമത്തിന് ഏറ്റവും പ്രധാനമാണ്. 2030 ഓടെ മെച്ചപ്പെട്ട ജലവിതരണത്തിലും ജനാരോഗ്യ സംരക്ഷണത്തിലും ആഗോള പ്രാപ്യത കൈവരിക്കുക എന്നത് സുസ്ഥിരവികസന ലക്ഷ്യങ്ങളിൽ (Sustainable Development Goals - SDGs) ഒന്നാണ്. “ഉറപ്പായ ലഭ്യതയും സുസ്ഥിര ജലവിഭവ മാനേജ്മെന്റും ജനാരോഗ്യ സംരക്ഷണവും ആണ് അത് കാംക്ഷിക്കുന്നത്. എന്നാൽ വരും തലമുറകൾക്കു വേണ്ടിയുള്ള സുരക്ഷിത കുടിവെള്ള സ്രോതസുകളുടെ പാരിസ്ഥിതിക സുസ്ഥിരത ഇന്ന് അപകടത്തിലാണ്. വിവിധങ്ങളായ ജലജന്യ രോഗങ്ങൾക്ക് കാരണമാകാൻ കഴിയുന്ന അവസ്ഥയിലേക്ക് മലിനീകരിക്കപ്പെട്ട കുടിവെള്ളം ജനങ്ങളെ എത്തിക്കുന്നു. ജലജന്യ രോഗങ്ങൾ മൂലമുണ്ടാകുന്ന രോഗാവസ്ഥയും മരണവും വരുത്തുന്ന ക്ഷീടനഷ്ടങ്ങൾ വളരെ ഉയർന്നതാണ്. മലിനജലത്തിന്റെ ഉപഭോഗം മൂലം സംഭവിക്കാവുന്ന ആരോഗ്യ അപകടാവസ്ഥകളെ (രോഗാവസ്ഥയും മരണവും) ഒഴിവാക്കാൻ സർക്കാരും ഗൃഹസ്ഥരും വിവിധങ്ങളായ മലിനീകരണ നിരോധന പ്രക്രിയകളിൽ മുതൽമുടക്കുന്നു. ജലശുദ്ധീകരണത്തിൽ നിക്ഷേപം നടത്തുക, ഉറവിടങ്ങൾ മാറ്റുക, അതുമല്ലെങ്കിൽ കുപ്പിവെള്ളം വാങ്ങുക -തുടങ്ങിയവ. ദരിദ്രരും പ്രാന്തവൽക്കരിക്കപ്പെട്ടതുമായ ജനവിഭാഗങ്ങളുമാണ് ഏറെ കഷ്ടപ്പെടേണ്ടി വരിക. മലിനീകരണത്തിന്റെ ആഘാതത്തിൽ നിന്നും മുക്തമാകാനുള്ള ചെലവ് വഹിക്കാൻ അവർക്ക് കഴിയില്ല. കുടിവെള്ള വിതരണം അവരുടെ അടുത്തേക്ക് എത്താറില്ല. ജലശുദ്ധീകരണത്തിന് മുതൽമുടക്കേണ്ടി വരുക എന്നത് അവർക്ക് ചിന്തിക്കാവുന്നതിനും അപ്പുറമാണ്.

നദികളുടെ ഉറവിടങ്ങളിൽ നിന്നും വൻതോതിൽ ജലമുറുന്നതും വഴിതിരിച്ചു വിടുന്നതും താഴ്ന്ന വിഭാഗങ്ങളിലെ ശുദ്ധജല ലഭ്യത തീരെ ഇല്ലാതാക്കുന്നു. വർഷം മുഴുവൻ ജലസമൃദ്ധങ്ങളായിരുന്ന നദികളിൽ അതിന്റെ തനിമയും പാരിസ്ഥിതിക ഒഴുക്കും നിലനിർത്തുന്നതിനാവശ്യമായ പുതുവെള്ളം ഇപ്പോൾ വേനൽക്കാലങ്ങളിൽ ലഭിക്കാറില്ല. നദികളുടെ എക്കോസിസ്റ്റത്തിനുള്ളിലുള്ള ഏതു തരത്തിലുള്ള അപകടവും ഉപരിതല ജലവും ഭൂഗർഭജലവും തമ്മിലുള്ള പരസ്പരാശിതത്വത്തെ അപകടാവസ്ഥയിലാക്കും. വൻതോതിൽ ജലം ചോർത്തു



നന്തിന്റെ ഫലമായി പലഭാഗങ്ങളിലും ഭൂഗർഭ ജലനിരപ്പ് അപകടാവസ്ഥയിലേക്ക് താഴ്ന്നുകൊണ്ടിരിക്കുകയാണ്. ഭൂജലസേചന സൗകര്യങ്ങൾ വികസിപ്പിക്കുന്നതിന് വേണ്ടത്ര നിക്ഷേപം ഇല്ലാതിരിക്കുക, കനാൽ വഴിയുള്ള ജലവിതരണത്തിലെ ഇടപെടൽ, ധനികർ വർദ്ധിച്ച തോതിൽ ജലസേചനത്തിനായി ഭൂഗർഭജലത്തെ ആശ്രയിക്കുന്നത്, അനിയന്ത്രിതമായി വർഷം മുഴുവൻ ഭൂഗർഭജലം പമ്പു ചെയ്യുന്നത് തുടങ്ങിയവ ഭൂഗർഭജലവിതാനം താഴുന്നതിലേക്ക് നയിക്കും. ഉപരിതല ജലത്തെ ആശ്രയിക്കുന്ന ജലസേചന സമ്പ്രദായത്തിനായുള്ള മുടക്കുമുതൽ പിൻവലിക്കുന്നതു പോലുള്ള ദീർഘവീക്ഷണമില്ലാതെയുള്ള ജലമാനേജ്മെന്റ് സമീപനം, ഭൂഗർഭജലത്തെ ആശ്രയിച്ചുള്ള ജലസേചനത്തിന് സൗജന്യ വൈദ്യുതി ലഭ്യമാക്കുകയും ജലസേചിത കൃഷിയെ അധികമായി പ്രോത്സാഹിപ്പിക്കുകയും ചെയ്യുക എന്നിവ ഇന്നത്തെ ജലദൗർലഭ്യത്തിന്റെ പ്രാഥമിക കാരണങ്ങളിൽ പെടുന്നു. ജലസേചിത കൃഷി സ്വീകരിച്ചതും കൂടുതൽ വെള്ളം ആവശ്യമായ കൃഷിരീതികളിലേക്ക് മാറിയതും മൂലമുണ്ടായ ജലദൗർലഭ്യം കൃഷിയുടെ ശേഷിയെ പിന്നോട്ടടിക്കുകയാണുണ്ടായത്.

ഇന്ത്യയുടെ നിരവധി പ്രദേശങ്ങൾ കടുത്ത ജലക്ഷാമത്തോടു മല്ലിടുമ്പോൾ, വെള്ളത്തിന്റെ വിലയിടൽ (pricing) ഇന്നത്തെ നിലയിൽ തുടർന്നാൽ മതിയോ എന്നത് ഗൗരവമായ സംഗതിയാണ്. ഇന്ത്യയിലെ ജലവിനിയോഗ കാര്യക്ഷമത തീരെ കുറവാണെന്നു തന്നെയല്ല നമ്മുടെ മൊത്തത്തിലുള്ള ജല ഉത്പാദനക്ഷമത ലോകശരാശരിയേക്കാൾ എന്തിന് ലാറ്റിനമേരിക്ക, കരീബിയ, സഹാറൻ ആഫ്രിക്ക എന്നിവിടങ്ങളിലെ വികസന രാജ്യങ്ങളുടേതിനെക്കാളും വളരെ കുറവാണ്. ചെലവുകൾക്കൊപ്പം ജലവിനിയോഗത്തിന് സാമ്പത്തിക വരവ്കൂടി കണക്കിലെടുക്കാതിരുന്നത് ജലവിനിയോഗ കാര്യക്ഷമതയെ പ്രോത്സാഹിപ്പിക്കാൻ കഴിയാതെ വരുകയും ഇന്ത്യയിലെ ജല ഉത്പാദനക്ഷമത താഴ്ന്ന നിലവാരത്തിൽ തന്നെ തുടരുകയും ചെയ്യും.

വരൾച്ചയെപ്പോലെ വെള്ളപ്പൊക്കവും കാര്യമായ സാമ്പത്തികഘാതങ്ങൾക്കിട വരുത്തും. വൻതോതിലുള്ള വിള, വസ്തു നാശങ്ങൾ, കന്നുകാലികളുടെയും മനുഷ്യരുടേയും ജീവനഷ്ടം എന്നിവയ്ക്കു പുറമെ പലവിധ ജലജന്യ രോഗങ്ങൾക്കും അത് ഇടവരുത്തും. ഇന്ത്യൻ നദീതടങ്ങളിലുണ്ടായേക്കാവുന്ന വെള്ളപ്പൊക്കം പ്രവചിക്കാനുള്ള പഠനമൊന്നും തന്നെ വേണ്ട രീതിയിൽ നടക്കുന്നില്ല. എന്നുതന്നെയുമല്ല വെള്ളപ്പൊക്കത്തിന്റെ ഫലമായി ഓരോ സാമ്പത്തിക





മേഖലയ്ക്കുമുണ്ടാകുന്ന ആഘാതത്തെ സംബന്ധിച്ചും പഠനങ്ങളൊന്നും നടക്കുന്നില്ല. നമ്മുടെ ഡാമുകളുടേയും റിസർവോയറുകളുടേയും സംഭരണശേഷി, പരിമിതി, കാലാവസ്ഥാ വ്യതിയാനം, വർഷകാലത്തെ മഴവെള്ളത്തിന്റെ കുത്തൊഴുക്ക് ഇവയെല്ലാം ചേർന്നാണ് വെള്ളപ്പൊക്കമുണ്ടാകുന്നത്. ഇന്ത്യൻ നഗരങ്ങളിൽ വെള്ളപ്പൊക്കമുണ്ടാകുന്നത് ഒരു സ്ഥിരം സംഭവമായി തീർന്നിട്ടുണ്ട്. മലിനജലം കൈകാര്യം ചെയ്യാനുള്ള സംവിധാനമൊന്നും മിക്ക നഗരങ്ങളിലുമില്ല. ഇതിനെല്ലാമുപരി നിലവിലുള്ള മലിനജല തീർപ്പാക്കൽ സംവിധാനങ്ങൾ നഗരത്തിലുണ്ടാകുന്ന മലിനജലത്തേയ്ക്കെ കൈകാര്യം ചെയ്യാൻ (ശേഖരിക്കൽ, കൊണ്ടുപോകൽ, ശുദ്ധീകരിക്കൽ, തീർപ്പാക്കൽ) കഴിയാതെ വീർപ്പുമുട്ടുകയാണ്. സ്വാഭാവിക മലിനജല ഓടകളോടും ചതുപ്പുകൾ, കുളങ്ങൾ തുടങ്ങിയ പരമ്പരാഗത മഴവെള്ള സംഭരണികളോടുംമുള്ള അവഗണന ഈ പ്രശ്നത്തെ കൂടുതൽ വഷളാക്കുന്നു. മഴവെള്ളം ശരിയായി കൈകാര്യം ചെയ്താൽ ശുദ്ധജലത്തിനുള്ള മൂല്യവത്തായ വിഭവമാണത്. വിദൂര സ്ഥലങ്ങളിൽ നിന്നും കൊണ്ടുവന്ന് വിതരണം ചെയ്യുന്ന കുടിവെള്ളത്തിന്മേലുള്ള നഗരങ്ങളുടെ ആശ്രിതത്വം കുറയ്ക്കാൻ ഇതിനു കഴിഞ്ഞേക്കും. നമ്മുടെ നഗരങ്ങളിൽ നിന്നും ജലസ്രോതസ്സുകൾ അതിവേഗം അകന്നു പോയ്ക്കൊണ്ടിരിക്കുന്നു. പലയിടത്തും ജലസ്രോതസ്സുകൾ നഗരത്തിൽ നിന്നും വളരെ ദൂരെയാണ്. ഹരിയാനയിലെ മൂനാക്ക് കനാലിൽ നിന്നുള്ള ജലവിതരണം ഈയിടെ തടസ്സപ്പെട്ടതും ഡൽഹിയിലെ കടുത്ത ജലദുർലഭ്യവും കാണിക്കുന്നത് എപ്രകാരമാണ് നഗരങ്ങൾ ദൈനംദിനാവശ്യങ്ങൾ നിർവ്വഹിക്കുന്നതിന് വിദൂര സ്ഥാനങ്ങളെ ആശ്രയിക്കേണ്ടി വരുന്നത് എന്നാണ്.

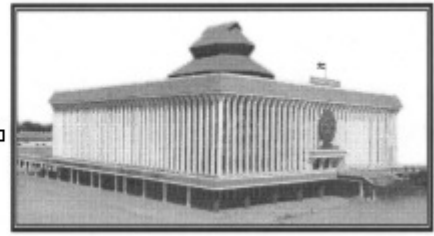
സുസ്ഥിരമായ ജലലഭ്യത നേടുന്നതിനും നിലനിർത്തുന്നതിനുമുള്ള ആത്മാർത്ഥമായ ശ്രമങ്ങളുടെ ഭാഗമായി ശ്രദ്ധിക്കേണ്ടത് നിലവിലുള്ള വെല്ലുവിളികളെ മാത്രമല്ല ഭാവിയിലെ ആശങ്കകളെക്കൂടിയാണ്. വിവിധ വിഭാഗങ്ങൾക്കുള്ള ജലത്തിന്റെ പങ്കുവയ്പ്പ്, നഗരങ്ങളിലേക്കും വ്യവസായങ്ങൾക്കുമായി വെള്ളം തിരിച്ചുവിടുന്നതുമായി ബന്ധപ്പെട്ട അഭിപ്രായവ്യത്യാസങ്ങൾ (വിദൂര ഉറവിടങ്ങളിൽ നിന്നും), അടിസ്ഥാന പാരിസ്ഥിതിക സേവനങ്ങൾ മെച്ചപ്പെടുത്തുന്നതിനായി നദികളുടെ പാരിസ്ഥിതിക ഒഴുക്ക് പുനഃസ്ഥാപിക്കൽ, ജലവിഭവ സംരക്ഷണവും പരിപാലനവും, അതാതിടങ്ങളിലെ ജലാവശ്യങ്ങൾ നിറവേറ്റുന്നതിനായി നഗരങ്ങളിലേയും ഗ്രാമങ്ങളിലേയും പ്രാദേശികമായ കുടിവെള്ള സ്രോതസ്സുകൾ



സംരക്ഷിക്കൽ, നഗരവൽക്കരണത്തിന് ആനുപാതികമായുള്ള ജലമലിനീകരണം പരിഹരിക്കൽ, വികസന പദ്ധതികളുടെ പാരിസ്ഥിതികാഘാതം കുറച്ചു കൊണ്ടുവരൽ, പരിസ്ഥിതിയുടെ മേലും പ്രകൃതിവിഭവങ്ങളുടെ മേലും ഉള്ള കാലാവസ്ഥാ വ്യതിയാനപരമായി ഉണ്ടാകുന്ന ആഘാതങ്ങൾ പരിഹരിക്കുക എന്നിവ ഇത്തരത്തിൽ പ്രത്യേക ഊന്നൽ കൊടുക്കേണ്ട സംഗതികളാണ്.

യോജന  
ജൂലൈ 2016





## ടെക്സ്റ്റൈൽ മേഖലയ്ക്ക് പുതിയ പാക്കേജ്

കൃഷി കഴിഞ്ഞാൽ രാജ്യത്ത് ഏറ്റവും കൂടുതൽ തൊഴിൽ സൃഷ്ടിക്കുന്ന മേഖലയാണ് ടെക്സ്റ്റൈൽ. കഴിഞ്ഞ ഏതാനും വർഷങ്ങളായി തളർച്ചയെ അഭിമുഖീകരിക്കുന്ന ആ മേഖലയെ വളർച്ചയുടെ പാതയിലേക്കു നയിക്കാനുള്ള പരിശ്രമങ്ങളുടെ ഭാഗമാണ് പുതിയ ടെക്സ്റ്റൈൽ പാക്കേജ്.

ഉല്പാദന യൂണിറ്റുകളെ ഉണർത്തി കൂടുതൽ തൊഴിൽസാധ്യതകളുണ്ടാക്കുന്നതാണ് പുതിയ നയം. വസ്ത്ര നിർമ്മാണമേഖലയിലെ തൊഴിലാളികൾക്ക് വേതന വർദ്ധന, തൊഴിൽ മാനദണ്ഡങ്ങളിൽ ഇളവ് തുടങ്ങിയാണ് പ്രഖ്യാപിച്ചിരിക്കുന്നത്. അടുത്ത മൂന്നുവർഷത്തിനുള്ളിൽ 3000 കോടി ഡോളറിന്റെ കയറ്റുമതിയും 74,000 കോടിയുടെ രൂപയുടെ നിക്ഷേപവും നേടാനാണ് സർക്കാർ ലക്ഷ്യമിടുന്നത്. വസ്ത്രനിർമ്മാണമേഖലയിൽ ജോലി ചെയ്യുന്ന 70 ശതമാനം സ്ത്രീ തൊഴിലാളികൾക്ക് പാക്കേജ് സഹായകരമാകും.

### പാക്കേജിലെ പ്രധാന നിർദ്ദേശങ്ങൾ

- പ്രതിമാസം പതിനയ്യായിരം രൂപയിൽ കുറവുവരുമാനമുള്ള, പുതുതായി ജോലിയിൽ പ്രവേശിക്കുന്ന വസ്ത്രനിർമ്മാണതൊഴിലാളിയുടെ പി.എഫ്. നിക്ഷേപത്തിലേക്ക് തൊഴിലുടമ നൽകേണ്ട വിഹിതമായ 12 ശതമാനം തുക കേന്ദ്ര സർക്കാർ നൽകും. ആദ്യത്തെ മൂന്നു വർഷത്തേക്ക് ഇത് ബാധകം.
- പതിനയ്യായിരം രൂപയിൽ കുറവ് പ്രതിമാസവരുമാനമുള്ള തൊഴിലാളികൾക്ക് ഇ.പി.എഫ്. നിർബന്ധമാക്കില്ല.
- തൊഴിലാളികളുടെ അധിക പ്രവൃത്തി സമയം എട്ടു മണിക്കൂറിൽ കൂടുതൽ.
- തൊഴിലാളികൾക്ക് നിശ്ചിത കാലയളവ് തൊഴിൽ ഉറപ്പുവരുത്തും.



■ തൊഴിലവസരങ്ങൾ വർദ്ധിപ്പിക്കാനായി വസ്ത്രനിർമ്മാണമേഖലയ്ക്ക് നൽകി വരുന്ന സബ്സിഡി 15 ശതമാനത്തിൽ നിന്ന് 25 ശതമാനമായി വർദ്ധിപ്പിക്കും.

■ കയറ്റുമതി വർദ്ധിപ്പിക്കാൻ നിരവധി ആനുകൂല്യങ്ങൾ

■ കയറ്റുമതിക്കാർക്ക് ആദായനികുതിചട്ടത്തിലെ 80 ജെ.ജെ.എ.എ. വകുപ്പിൽ ഇളവുകൾ. ഈ വകുപ്പ് ബാധകമാവുന്ന പ്രവൃത്തിദിവസങ്ങൾ 240-ൽ നിന്ന് 150 ദിവസമായി ചുരുക്കും.

എന്നാൽ ചെറുകിട ഉല്പാദകരെയും പരമ്പരാഗതരീതിയിൽ ഈ മേഖലയിൽ പ്രവർത്തിക്കുന്നവർക്കും നയം അത്ര ആശാവഹമല്ലെന്ന ആശങ്കകളും ഉയർന്നിട്ടുണ്ട്.

ഉല്പാദനത്തെയും നവീകരണത്തെയും കയറ്റുമതിയെയുമൊക്കെ ലക്ഷ്യം വച്ച് സബ്സിഡികളും ധനസഹായവുമൊക്കെ നിശ്ചയിക്കുമ്പോൾ അതിന്റെ ഗുണഭോക്താക്കളാവാൻ തങ്ങൾക്ക് പ്രയാസകരമാകുമെന്ന് ചെറുകിടക്കാർ പറയുന്നു.

പ്രൊഡക്ഷൻ ഇൻസെന്റീവ്, ടെക്നോളജി അപ്ഗ്രേഡേഷൻ ഇൻസെന്റീവ് എന്നിവയും ക്യാപിറ്റൽ സബ്സിഡിയുമൊക്കെയാണ് പുതിയനയത്തിൽ ഉൾപ്പെടുത്തിയിരിക്കുന്നത്. വൻബാധ്യതകളെ തുടർന്ന് കെണിയിലായിട്ടുള്ള വൻകിട ടെക്സ്റ്റൈൽ മില്ലുകൾക്ക് നയം ആശ്വാസമാകും.

2015-16 സാമ്പത്തികവർഷം 47.5 ബില്യൺ യു.എസ്. ഡോളറിന്റെ ടെക്സ്റ്റൈൽ കയറ്റുമതിയാണ് സർക്കാർ ലക്ഷ്യമിട്ടിരുന്നത്. എന്നാൽ 40 ബില്യൺ ഡോളറിന്റെ കയറ്റുമതി മാത്രമേ നടത്താനായിട്ടുള്ളൂവെന്നാണ് പുതിയ റിപ്പോർട്ടുകൾ.

ടെക്സ്റ്റൈൽ മേഖലയിലെ മാന്യം രാജ്യത്തിന്റെ സമ്പദ്ഘടനയിൽ തന്നെ പ്രതിഫലിക്കുന്ന ഒന്നാണ്. ജി.ഡി.പിയുടെ 4 ശതമാനത്തോളം ഈ മേഖലയാണ് സംഭാവന ചെയ്യുന്നത്. മാത്രമല്ല രാജ്യത്തെ വ്യവസായിക ഉല്പാദനത്തിന്റെ 14 ശതമാനവും ടെക്സ്റ്റൈൽ മേഖലയിൽ നിന്നാണ്.



ഗ്രാമീണ സമ്പദ്‌വ്യവസ്ഥയെ പുഷ്ടിപ്പെടുത്തുന്നതിന് പുതിയ നയം ഉപകരിക്കുമെന്ന വാദം ശക്തമാണെങ്കിലും മേഖലയിൽ പരമ്പരാഗത രീതിയിൽ ഉല്പാദനം നടത്തി ഉപജീവനം നടത്തുന്നവർക്ക് നയം തിരിച്ചടയാകുമെന്ന സംശയവും ബലപ്പെടുന്നുണ്ട്.

ബിസിനസ് ന്യൂസ്

ജൂലൈ 2016







## **Economic Impact of Education Loan in Kerala**

**Remya V.L. and T. Rajesh**

Education is a pre-condition to achieve sustainable growth. It is the process of instruction aimed at the all round development of individuals, providing with necessary tools to participate in day to day activities of the world. It generates a wide range of social benefits such as better health, less crime, lower unemployment and so on. It not only impacts the human development and economic growth, but also the fundamental requirements of democracy. All these emphasize the importance of education in the present world. The growing importance of education and knowledge in the social process and economic development highlight the role of higher education as an engine for economic growth. In the knowledge era, higher education has gained significant acceptance all over the world. The output of higher education is inevitable one for meeting the changing requirements of the society and equal access to higher education is predictable one for achieving the balanced development of the nation.

In the early nineties, like other developing nations, India also faced financial crisis. This will ultimately suffered the higher education in terms of allocations. The reduction of allocation and raising access ratio in higher education paved the entry of many private players in the field of higher education. This entry may lead to the dominance of private sector in the field of professional courses like engineering, medicine, nursing and management etc. They impose excessive tuition fees and capitation fees for their offerings. The government and other authorities have no option to say anything to these players because of several reasons. This will act as stumbling block for ensuring equal access of professional courses to all the strata of the economy. In this scenario the education loan scheme comes in to focus in order to raise access ratio in higher education.

Student loan financing is not a new phenomenon in India. Just after independence, a scheme of student loans was started under which educational loans were advanced to



**Table- 1**

<b>Monthly Family Income wise classification of respondents in respect of Satisfaction on document formalities</b>					
Family Income/Satisfaction Level	Less thanRs 5000	Rs 5000- 15000	Rs 15000-25000	More than Rs 25000	Total
Highly satisfied	-		6.7	6.7	13.3
Moderately satisfied	-	6.7	6.7	6.7	20.0
No opinion	6.7	6.7	6.7	-	20.0
Dissatisfied	26.7	6.7	-	-	33.3
Highly dissatisfied	6.7	6.7	-	-	13.3
<b>Total</b>	<b>40.1</b>	<b>26.9</b>	<b>20.0</b>	<b>13.3</b>	<b>100.0</b>

Source: Survey Data All figures are in percentage. Chi-Square Values=38.33; p Value=.000

**Table- 2**

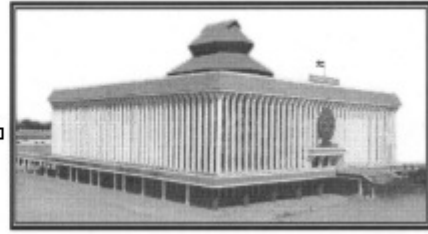
<b>Monthly Family Income wise classification of respondents in respect of Satisfaction on document formalities</b>					
Family Income/Satisfaction Level	Less thanRs 5000	Rs 5000- 15000	Rs 15000-25000	More than Rs 25000	Total
Highly satisfied	-	-	6.7	6.7	13.3
Moderately satisfied	-	13.3	6.7	6.7	26.7
No opinion	-	-	6.7	6.7	13.3
Dissatisfied	13.3	6.7	6.7	-	26.7
Highly dissatisfied	13.3	6.7	-	-	20.0
<b>Total</b>	<b>26.6</b>	<b>26.7</b>	<b>26.7</b>	<b>20.0</b>	<b>100.0</b>

Source: Survey Data All figures are in percentage. Chi-Square Value 46.250; p Value=.000

**Table- 3**

<b>Monthly Family Income wise classification of respondents in respect of Satisfaction on market compatibility of interest</b>					
Family Income/Satisfaction Level	Less thanRs 5000	Rs 5000- 15000	Rs 15000-25000	More than Rs 25000	Total
Highly satisfied	-	-	6.7	-	6.7
Moderately satisfied	-	-	6.7	6.7	13.3
No opinion	-	13.3	-	6.7	20.0
Dissatisfied	13.3	6.7	13.3	6.7	40.0
Highly dissatisfied	13.3	6.7	-	-	20.0
<b>Total</b>	<b>26.7</b>	<b>26.7</b>	<b>26.7</b>	<b>20.0</b>	<b>100.0</b>

Source: Survey Data All figures are in percentage. Chi-Square Values=50.000.33; p Value=.000



displaced students from East and West Pakistan through the Social Welfare and Rehabilitation Directorate, New Delhi. Another such scheme was the interest-free scheme of educational loans i.e. National Loan Scholarship Scheme introduced in 1963. This National Loan Scholarship Scheme was run through the state governments. Under this scheme, interest free loans were provided to meritorious students for pursuing post-matric education. But this government sponsored National Loan Scholarship Scheme proved to be a failure when assessed in terms of recovery of loan. Moreover, the economic crisis facing Government of India in the early nineties necessitated the winding up of this scheme. Hence, it was dropped in the beginning of the nineties. At the same time, it was realized that a similar type of educational-loan scheme was required to cushion the impact of rising user-charges of higher education in India. Accordingly, a new scheme of education loans, namely, Education Loan Scheme, was started. The Government of India introduces this scheme with the intention of ensuring equal access of higher education to all strata of the economy. The main tenet of the scheme was its economic viability. Economic viability can be achieved only through the proper functioning of this scheme. Hence the proper understanding of the effective working of this scheme is inevitable for finding the deficiencies of this scheme from economic perspective.

There are many beneficiaries of education loan scheme. The major among them are engineering students, medical students, management students, nursing students and students of other professional courses. Since this study gives emphasis to the responses among the students of medical and engineering courses with special reference to the Thiruvananthapuram district.

### **Objectives**

The main intent of the study is to evaluate the economic impact of the education loan scheme.

### **Data Base and Methodology**

In pursuance of the above mentioned objective, the following methodology was adopted for conducting the study. The present study is an analytical one based on primary data.



### **Primary data**

Primary data required for the study have been collected from selected beneficiaries (students of medical and engineering courses) from the selected commercial banks from the district of Thiruvananthapuram. An interaction with officials of selected commercial banks also have been considered for the study.

### **Variables Selected for the Study**

For evaluating the economic impact of education loan the following variables are selected.

1) satisfaction on document formalities, 2) satisfaction on procedural formalities, 3) satisfaction on interest rate 4) satisfaction on repayment structure and repayment period.

### **Data Analysis**

It can be seen from the Table-1 that 6.7 per cent of the students belonging to the monthly family income ranging between Rs 15000 - Rs 25000 are highly and moderately satisfied with the document formalities associated with the education loan. The same percentages of students falling the monthly family income of more than Rs 25000 are highly and moderately satisfied with document formalities for education loan. The table results also shows that major chunk of students (26.7 percent) belonging to the monthly family income level of less than Rs.5000 are dissatisfied with the document formalities associated with the education loan. This is an indication that the monthly family income increases the satisfaction level of students also shows an enhanced level in respect of document formalities for education loan. The p value shows that the difference seen in the satisfaction level of students grouped under different monthly family income is statistically significant and meaningful.

Table-2 reveals that that the students who come under the monthly family income ranges between Rs 15000 and above are highly and moderately satisfied with the procedural formalities associated with the sanctioning of education loan. But the things are very different in the case of students having lower family income. The table results shows that major hunk of students falling under the lower monthly family income are dissatisfied or highly dissatisfied with the legal formalities associated with the sanctioning of education loan. This is an indication that when the monthly family



**Table- 4**

<b>Monthly Family Income wise classification of respondents in respect of Satisfaction on repayment structure</b>					
Family Income/Satisfaction Level	Less thanRs 5000	Rs 5000- 15000	Rs 15000-25000	More than Rs 25000	Total
Highly satisfied	-	-	6.7	-	6.7
Moderately satisfied	-		6.7	13.3	20.0
No opinion	-	13.3	-	-	13.3
Dissatisfied	13.3	13.3	13.3	6.7	46.7
Highly dissatisfied	13.3	-	-	-	13.3
<b>Total</b>	<b>26.6</b>	<b>26.6</b>	<b>26.7</b>	<b>20.0</b>	<b>100.0</b>

Source: Survey Data All figures are in percentage. Chi-Square Values=75.238; p Value=.000

**Table- 5**

<b>Monthly Family Income wise classification of respondents in respect of Satisfaction on Repayment period</b>					
Family Income/Satisfaction Level	Less thanRs 5000	Rs 5000- 15000	Rs 15000-25000	More than Rs 25000	Total
Highly satisfied	-	-	6.7	-	6.7
Moderately satisfied	-	-	6.7	20.0	26.7
No opinion	6.7	-	-	-	6.7
Dissatisfied	6.7	20.0	13.3	-	40.0
Highly dissatisfied	13.3	6.7	-	-	20.0
<b>Total</b>	<b>26.6</b>	<b>26.7</b>	<b>26.7</b>	<b>20.0</b>	<b>100.0</b>

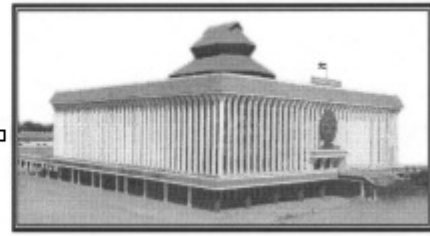
Source: Survey Data All figures are in percentage. Chi-Square Values=78.750; p Value=.000

**Table- 6**

<b>Monthly Family Income wise classification of respondents in respect of Financial empowerment through loan</b>					
Family Income/Satisfaction Level	Less thanRs 5000	Rs 5000- 15000	Rs 15000-25000	More than Rs 25000	Total
Highly satisfied	-	-	6.7	6.7	13.3
Moderately satisfied	-	-	6.7	6.7	13.3
No opinion	6.7	-	-	-	-
Dissatisfied	6.7	13.3	-	6.7	13.3
Highly dissatisfied	13.3	13.3	13.3	-	40.0
<b>Total</b>	<b>26.7</b>	<b>26.7</b>	<b>26.7</b>	<b>20.0</b>	<b>100.0</b>

Source: primary Data  
All figures are in percentage. Chi-Square Values=78.750; p Value=.000



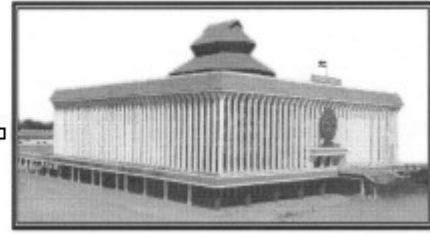


income of students increases the satisfaction level in this regard is also increased. The p value results shows that the satisfaction level of students grouped under different monthly family income are statistically significant.

It is evident from the Table 3 that students belonging to lower family income group are dissatisfied and highly dissatisfied with the market compatibility of the interest rate. They feel that interest rate charged is not affordable and that is not capable of creating satisfaction level among themselves. This is seen in the case of higher income groups also. The table results shows that 6.7 per cent of students belonging to monthly family income more than Rs.25000 and 13.3 per cent of students come under the monthly family income ranges between Rs.15000-Rs.25000 are strongly exhibit their dissatisfaction in respect of interest rate. The p value shows that the difference in the satisfaction level between students grouped on their family monthly income in respect of market compatibility of rate of interest is statistically significant.

It can be seen from Table 4 that the students belong to lower family income finds difficulty to make the repayment of loan amount. They are dissatisfied and highly dissatisfied with the existing repayment schedule. The table results shows that 6.7 percent of students each belonging to the monthly family income of Rs. 15000-Rs.25000 are highly and moderately satisfied with the present repayment structure, while 13.3 percent of students falling under the same income shows their dissatisfaction level regarding the repayment structure. The 6.7 per cent of students belonging to higher income groups are not satisfied with the existing repayment system followed by the lending institutions, The p value shows that the difference in the satisfaction level between students grouped on their family monthly income in respect of repayment structure is statistically significant.

It can be seen from the Table 6 that the major group of students fall under lower monthly income groups feel that the education loan is not capable of creating satisfaction in respect of financial empowerment. The fifty percent of students fall under high income groups opined that education loan is capable of creating financial empowerment. The remaining students in the same income group opined that education loan did not play any role in creating financial loan among themselves. The p value shows that the difference in the satisfaction level between students grouped on their family monthly income in respect of repayment period is statistically significant.



**Findings** The study is mainly intent to identify and evaluate the economic impact of educational loan. The data collected was analysed through appropriate statistical tools and it leads to the following findings.

1. Low income groups are not satisfied with the document formalities prescribed by the bank for sanctioning of loan.

2. People who are in the low strata of income level are dissatisfied with the procedural formalities stipulated by the bank in connection with education loan

3. Respondents belonging to lower family income group are highly dissatisfied with the market compatibility of the interest rate.

4. People belong to lower family income finds difficulty to make the repayment of loan amount.

5. Lower income groups are not satisfied with the existing repayment period of education loan.

6. Majority of respondents fall under lower monthly income groups feel that the education loan is not capable of creating satisfaction in respect of financial empowerment.

**Conclusion** : The post modern economic era middle and low income groups cannot afford the cost of education. Cost of education is increasing day by day and now quality education has becoming a dream for lower sections of the people. Major chunk of Kerala population are belonging to either middle or low-income strata and their empowerment is possible only by providing quality education and thereby making them as true resource to the Nation. However, the existing loan policies are not capable of attaining this golden objective. To be a true contributor to the national economy, commercial banks should reduce their loan formalities and restructure the loan repayment. In addition the interest rate should be lowered and to make it affordable to all sections of the people. Through adopting these people friendly attitude and approach in providing educational loan, the commercial bank can prove that they are the economic balancer of the nation.



## Mapping under scanner

Divya Trivedi

The proposed Geospatial Information Regulation Bill, which seeks to make graphic depiction and sharing of geographic coordinates of India obtained through aerial platforms a punishable offence, draws widespread criticism.

The Geospatial Information Regulation Bill, 2016, which has been put up for discussion in the public domain by the Ministry of Home Affairs, may severely impact on the utilitarian values of information technology, which mobile phone users have taken for granted. For instance, seemingly harmless acts such as clicking the picture of a landscape from an airborne aircraft's window seat and posting it on Instagram or sharing it on WhatsApp, may become punishable offence if prior permission is not obtained for the same.

Geospatial information, according to the Bill, means “geospatial imagery or data acquired through space or aerial platforms such as satellite, aircrafts, airships, balloons, unmanned aerial vehicles, including value addition; or graphical or digital data depicting natural or man-made physical features, phenomenon or boundaries of the earth or any information related thereto, including surveys, charts, maps, terrestrial photos referenced to a co-ordinate system and having attributes”. A person found to have stored such images on a device or in print may face a fine of up to Rs.100 crore, or a seven-year prison term, unless otherwise permitted. The punishment for taking a picture is disproportionate to the “offence” when compared with, say, the punishment for sexual harassment, which is up to three years of imprisonment. This Bill, if enacted, will be retrospective in nature, which means that all those who have



already committed the “act” of clicking or storing or printing such images need to queue up before an authority to obtain a licence in order to avoid criminal proceedings. It is not clear how the government proposes to monitor each and every smart phone or device with an inbuilt GPS (Global Positioning System). What is also not clear is the Central government’s larger agenda: whether it wants to integrate technology with the lives of people or restrict its capabilities. It is not clear how the Digital India dream that Prime Minister Narendra Modi keeps talking about is to be achieved if such a regressive legislation is passed.

At this stage, the proposed law also seems to be at odds with businesses using location-specific information, which have become a part of the daily lives of many Indians. Mobile applications that need a GPS—from food delivery platforms to cab services—rely heavily on geospatial data. Many applications that allow online train/bus/flight ticket booking use location specific data.

What triggered the proposed legislation was the depiction of Jammu and Kashmir as part of Pakistan and Arunachal Pradesh as part of China in some social networking sites. With this in mind, the Bill aims to regulate acquisition, dissemination, publication and distribution of geospatial information that is likely to affect the security, sovereignty and integrity of India. The Mumbai terror attack of November 26, 2008, is repeatedly recalled in defence of the Bill. There is no gainsaying the importance of protecting sensitive information to safeguard the country and its citizens against acts of terrorism. But, ironically, the Bill penalises the citizen as it applies to citizens of India outside India, persons in the service of the government, wherever they may be, and persons on ships and aircraft, registered in India, wherever they may be. Interestingly, the Bill does not include non-Indians in its ambit, who may misuse spatial data to harm the nation’s security and sovereignty. They are free to acquire, disseminate, publish or distribute information without any restriction whatsoever.

The Bill is also at odds with the National Geospatial Policy (NGP), 2016. “Taking into consideration the increasing growth of the use of Geospatial



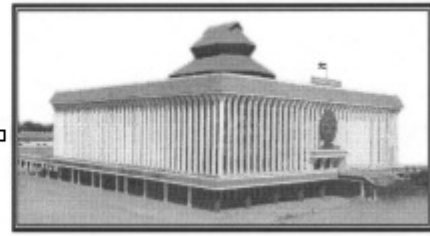
Data, Products, Services and Solutions (GDPSS)”, the comprehensive NGP was promulgated in April “to empower people through geospatial technologies”. The NGP says: “The wide availability of satellite data and digital forms of map information through networks has rendered the erstwhile policies of restricting map information to citizens obsolete in many countries. The mass markets for spatial information has become a reality and this trend is likely to grow.” The policy is applicable to geospatial data based products, solutions and services offered by governments, private organisations, non-governmental organisations and individuals. According to the policy, all geospatial data, products, solutions and services will be categorised as restricted, unrestricted and open on the basis of features and not on the basis of their geography.

It is pertinent to note that map making and distribution of maps in India have always been regulated by the Survey of India, which had the sole right to draw maps. The restrictions were never implemented stringently. According to the NGP: “The National Map Policy, 2005, defines the scope, distribution and access of digital Survey of India topographic maps to user groups without jeopardising national security.”

Unlike the proposed legislation, the National Map Policy does not have a blanket order but specifies that wrong borders and sensitive areas should not be shown on maps. It does not place many restrictions on the use of open series maps (as opposed to defence series maps) that otherwise conform to the provisions of the National Map Policy, which can be used by anybody to overlay spatial data on the map.

The Civil Aviation Requirement, 2012, according to the NGP, “details procedures for issuance of flight clearances for agencies undertaking aerial photography, geophysical surveys, cloud seeding, etc”. The Remote Sensing Data Policy (2001 & 2011) defines “the distribution process of satellite images to different category of users”. The National Data Sharing and Accessibility Policy, 2012, provides “an enabling provision and platform for proactive and open access to the data generated through public funds available with various departments or organisations of the Government of India”.





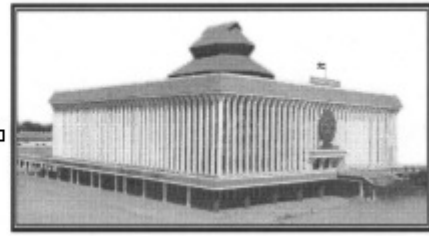
Legal experts fear that if the provisions regulating map making and sharing are enforced, innovative map making technologies and location based services that drive people's lives today will be badly affected.

### SUBMISSIONS ON THE BILL

The government has received several submissions, including sharp criticisms, on the draft Bill. The Vidhi Centre for Legal Policy has submitted that the Bill placed serious obstructions in the path of independent environmental research and informed and effective public participation in environmental decision-making. Arguing that the right to access information and to participate in environmental decision making are integral components of the right to environment upheld by the Supreme Court under Article 21 of the Constitution, and also affirmed by the High Courts, the National Green Tribunal and the Central Information Commission have demanded that the Bill be withdrawn, or at the very least, that the use of geospatial information for the purposes of participation in environmental decision-making be exempted from its provisions.

The digital and telecom resource centre, Medianama, has suggested that the Bill be renamed the Sensitive Geospatial Information Regulation Bill and that its scope be limited to the depiction of information deemed sensitive from the perspective of national security. It said: "Given that the devices and services would generate billions of location data points every second, it is impractical and impossible for any security vetting agency to track this data." It wanted a clear definition of national security. "This Bill should not be applicable to those who use geospatial information or have nothing to do with the depiction of maps. It should be applicable only to mapping companies for their depiction of mapping data, and for the data that they themselves [and not users] represent on a map, as well as how mapping companies represent data 'Within India. As intermediaries, they can't be responsible for data that users generate. As explained above, users cannot be held responsible for data they inadvertently generate," it said.

According to the Internet Democracy Project, the Bill will be disastrous for businesses, communities and individuals. "A range of non-commercial



applications of Geographic Information Systems will be hit. Humanitarian efforts have been revolutionised in the aftermath of the availability of high-quality satellite imagery. This has led to the mapping of areas after earthquakes and floods hit areas such as Nepal and Chennai [Tamil Nadu], and enabled volunteers to provide information about the condition of roads and the availability of relief. These cases of use would not have been possible with the current Bill. By covering practically any visual representation of information about coordinates in its ambit, the Bill will impede several academic uses of maps in fields such as architecture,” it said.

The Internet Democracy Project has pointed out that the Bill disproportionately affected many marginalised sections—such as persons with disabilities (PWDs) and forest-dwelling communities—for whom mapping has been a crucial tool in recording and using information about their surroundings and for demanding their rights. “Maps are an integral part of assistive devices, and help PWDs commute and find their offices, homes, places of recreation, etc. By regulating map use, the government is essentially pushing the situation of PWDs back by 20 years, putting PWDs back at the mercy of strangers on the street. [Similarly] rights over homestead land that have been occupied for generations were not recognised before the passage of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act in 2006. The procedure provided in the hard-won Forest Rights Act [FRA], which recognises claims to forest areas by communities who have resided there for generations, relies on mapping as one of the core evidences. The introduction of the Bill poses a big question on the claims process provided for in the FRA, as acquisition of geospatial information by any person is illegal under the proposed Bill. The broad definition of “geospatial information” draws within its sweep hand-drawn maps that include natural features and landmarks referenced to a coordinate system: The definition also includes the acquisition and use of GPS information. Both of these mapping techniques are widely used in the process of filing individual and community forest rights claims.”



## PAKISTAN'S OBJECTION

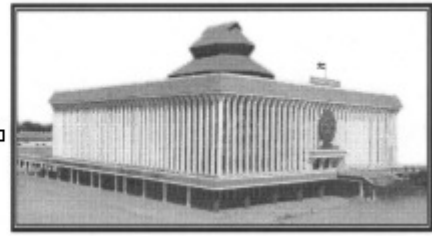
Objections to the Bill came from an unusual quarter: Pakistan. A stakeholder, Pakistan raised concerns with the United Nations Secretary- General and the President of the U.N. Security Council over the depiction of Jammu and Kashmir as part of Indian territory, which, according to it, is factually incorrect and legally untenable. It called upon the U.N. to uphold the Security Council resolutions and urged India to stop acts that violated international laws. India hit back by saying that the Bill was an internal matter and that Pakistan had no locus standi in the matter.

External Affairs Ministry spokes- person Vikas Swarup said: “The proposed Bill is an entirely internal legislative matter of India, since the whole of the State of Jammu and Kashmir is an integral part of India. Pakistan or any other party has no locus standi in the matter. The government firmly rejects Pakistan’s repeated and increasing attempts to impose on the international community matters that India has always been open to address bilaterally with Pakistan.”

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## How to control freely available data

R.RAMACHANDRAN

The draft Geospatial Information Regulation Bill defies logic at a time when digital technology is ubiquitous and geospatial information, about any part of the world is freely available to anyone with an Internet connection.

uation Bill (GIRB), introduced in Parliament and released online to the public on May 4 for comments, is perhaps one of the most anachronistic pieces of legislation that the government has come out with.

Article 3 of the Bill says:

“(1) Save as otherwise provided in this Act, rules or regulations made thereunder, or with the general or special Permission of the Security Vetting Authority, no person shall acquire geospatial imagery or data including value addition of any part of India either through any space or aerial platforms such as satellite,



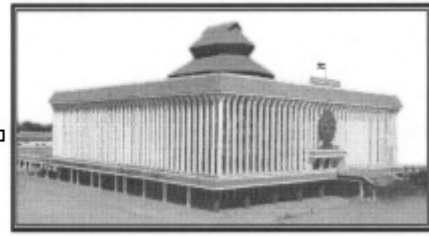
aircrafts, airships, balloons, unmanned aerial vehicles or terrestrial vehicles, or any other means whatsoever.

“(2) Every person who has already acquired any geospatial imagery or data of any part of India including value addition prior to coming of this Act into effect, shall within one year from the commencement of this Act, make an application along with requisite fees to the Security Vetting Authority for retaining such geospatial information and grant of licence thereof.”

Violations of these will attract heavy penalties, which can vary from Rs.1 crore to Rs.100 crore and/or imprisonment up to a period of seven years. The Bill is highly authoritarian and heavy-handed in tone and its whole emphasis is on licensing, security vetting and penalising, and there is absolutely nothing in it about facilitating access to and usage of geospatial information that is of importance to the public, to business and for development in general. Contrast this with the corresponding Chinese Act, which says in its Article 11: “*Basic surveying and mapping is a public welfare undertaking*” (emphasis added). This intent is completely absent in the Indian Bill.

At a time and age when digital technology is ubiquitous and “geospatial information” about any part of the world is available freely to any one with Internet connectivity to download even on a mobile phone and such information is increasingly becoming part of our daily lives (the next time you call a radio taxi, re- member that it usesGPS-enabled device), the Bill defies logic.

What does geospatial information or data mean? The phrase refers to data that have a geographic component to them, that is, data that have geographic information tagged to them, say in the form of coordinates, an address, a city



name, or any other locational attribute. Geospatial technology refers to technology used to acquire, manipulate and store such geographic information. Such information can be provided in the form of (digital) maps, remote sensed data, data gathered through the use of the Global Positioning System (GPS) and geographically referenced satellite imagery.

The geospatial information system (GIS), an industry that has grown rapidly in the last couple of decades, is a computer-based system capable of assembling, storing, manipulating and displaying different kinds of geo-referenced information, and analysing the same to provide solutions for decision-making in developmental and infrastructure projects, land use, urban development, construction activities, water supply, irrigation, rural electricity supply and highway development and providing public utility services, such as communication networks, drainage systems, roads, public transport and traffic regulation.

Geospatial data is also an important component of scientific research and industrial activity relating to geological formations, landslips, tectonic studies, mineral and oil explorations, and coastal and oceanographic studies. For such applications, usually, large-scale topographic maps (1:50,000 and larger) are needed. With the advent of the GIS, the demand for geospatial block in the growth of this industry in India despite the country's apparent strength in the information technology sector and its fast-growing GIS community, both in academia and in business.

Following widespread criticism about the lack of an enabling environment for the growth of GIS activity in the country, for the first time nine agencies other than the SOI were identified (see an MoD order of July 13,1998) to



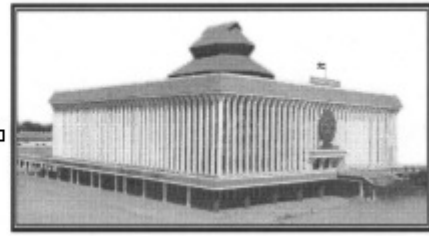


engage with private agencies under memorandums of understanding to provide access to restricted digital SOI data for work relating to specific government projects on a “need to share” basis. But many companies found it too cumbersome and time-consuming to get registered, enter into an agreement and finally get the required data after vetting by the MoD. They preferred not to do any business with the government. In any case, this system did not last for long as technology was advancing rapidly.

With the availability of GPS signals in the unscrambled mode, differential GPS (dGPS) as it is called, in the public domain at the turn of the century, the very paradigm of mapping and cartography changed. Agencies could create a map at large enough scales using satellite imagery of appropriate resolution combined with terrestrial coordinate determination using the GPS. The American private remote-sensing satellite IKONOS, launched in January 2000, began to openly sell imagery at 1 m resolution, which could be used to produce maps at 1:10,000 scale.

It may be noted that before IKONOS, the Indian Space Research Organisation’s (ISRO) IRS satellite was providing the highest-resolution images in the world at 5.8 m resolution. ISRO evolved its Remote Sensing Data Policy in 2001 (RSDP-2001), which allowed open access to all remote-sensed data up to 5.8 m resolution and restricted access for government agencies to data up to 1 m resolution. The SOI, unfortunately, did not exploit these enabling provisions to produce maps in any systematic manner.

However, such satellite imagery based maps began to be available on-line from different agencies for a price, which the GIS community was beginning to use. But there was a problem with this approach. To obtain the correct



orientation of the map and depiction of relief (or elevation), these satellite images had to be corrected for geometric distortion caused by the tilt of the satellite relative to the data plane and their correct orientation had to be fixed on the basis of ground truth. This geometric correction, known technically as orthorectification, requires appropriate digital elevation models (DEMs) and/or positional data of what are called ground control points (GCPs) from existing topographic maps at the required scale. But accurate GCP data are held confidential by the SOI. Even when restricted toposheets were released for project-specific use, GCP data were not given.

Moreover, the reference frame used for “geocoding” (defining the coordinates of) the SOI maps is the datum called the Everest Ellipsoid, the local ellipsoid that fits best the curvature of the spheroidal shape of the earth in the Indian region. The centre of this ellipsoid does not, however, coincide with the centre of the earth; it is removed by about a kilometre. In other words, it is not a geocentric system but serves the purpose of geocoding of maps of the region reasonably well, and thus the SOI toposheets are also geocoded on Everest. Similarly, other countries have other datums that are best suited to their regions of the world. So coordinates measured on one datum would be shifted with respect to coordinates measured on any other.

#### **GLOBAL REFERENCE FRAME**

However, in the last decades of the 20th century, countries have begun to adopt a global reference frame that does not change from country to country. It is called the World Geodetic System 1984 (WGS-84) and was evolved in the United States. Although it is meant to fit the North American region better



than the rest of the world, being geocentric, it has come to be used as the global coordinate system. All satellite navigation and imagery, coordinate measurements made using the GPS, and other similar aid used for the Global Navigation Satellite System (GNSS) are based on WGS-84. Thus, the positional coordinates that are read off GPS instruments, which are on WGS-84, and those on satellite-derived maps would be shifted relative to the corresponding coordinates on an SOI map. Depending on the location, this shift could vary from a few metres to even hundreds of metres when the two are compared.

To go from one datum to another, one needs to use a set of transformation parameters which are arrived at by knowing the coordinates of a large set of GCPs across the country in both the datums. But such an exercise can be undertaken only by a large agency such as the SOL. And, indeed, the SOI had undertaken this exercise by measuring the GPS-based coordinates of the set of GCPs it used for its maps and evolved the transformation parameters for the entire country. But these, too, have been held confidential by the SOI, thus denying the GIS community the geospatial data it needed.

Given the constraints arising from security considerations in accessing the geospatial data of the Indian region from the SOI, in 2000 the DST mooted the idea of creating a National Spatial Data Infrastructure (NSDI) to serve as a single-window agency to meet the needs of all the stakeholders of geospatial data, in particular the GIS community (*Frontline*, October 27, 2000). A task force constituted to recommend the modalities of establishing such a unit, *inter alia*, recommended that the SOI should come out with two series of maps, one for the use of defence and security agencies and the other for civilian use, with the latter being based on WGS-84. This recommendation had the MoD's approval (*Frontline*, August 26, 2005) and formed the basis



of the NMP of 2005.

Even as the SOI was engaged in this exercise from around 2000 onwards, technology was advancing much too rapidly for the agency, whose Plan budget then was around *Rs.4 crore*, to keep pace with. The dGPS receivers were becoming more and more compact and could be carried around with ease to measure coordinates in the region of interest. If all worldwide geospatial data are migrated on to WGS-84, notwithstanding the significant error that could be there in absolute positional accuracy of a particular location, the relative accuracy, say in the distance between two points, can be made more and more precise by repeated measurements of the coordinates of these two points using dGPS receivers. And this made life extremely easy for a GIS industry that was finding it tough to get any large-scale digital toposheet from the SOI. Moreover, imagery from satellites with sub-metre resolution capability was becoming available openly, which could be used for scales larger than 1:10,000.

### **NATIONAL MAP POLICY**

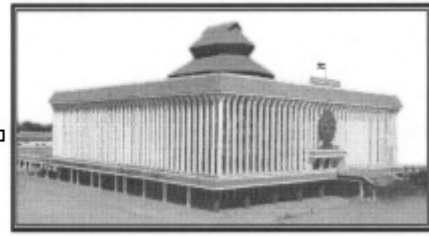
The stated objectives of the NMP are “*To provide, maintain and allow access and make available the National Topographic Database (NTDB) of the SOI conforming to national standards*” and “*To promote the use of geospatial knowledge and intelligence through partnerships and other mechanisms by all sections of the society*”. In accordance with the earlier decision, it also enunciated the creation of two series of maps: (a) Defence series maps (DSMs), which are (analogue and digital) topographic maps (on both Everest and WGS-84) that will remain classified under the control of the MoD; and (b) open series maps (OSMs), to support developmental activities in the country, which



will be on WGS-84 only. OSMs (both in analogue and digital form) will have no civil/military VAs and VPs shown and will be unrestricted” after a one-time clearance from the MoD.

The SOI has also issued guidelines on access by user agencies, dissemination/sharing of OSMs amongst user agencies with or without value addition, publication (both in hard form and on the Web with or without GIS database), and so on. While there have been criticisms of the NMP and the guidelines as well -for example, the maps will have no contours/height information and the requirement of registration of the user for larger than 1:1 million scale maps-it definitely marked an attitudinal change towards liberalising access. “From the perspective of those who had written it, the government was opening up; in fact, it was very consoling,” observed Manosi Lahiri, a GIS expert and the CEO of ML Mapinfo, New Delhi. “I tried several times to register but could not. Actually, it was not a map policy for India; it was a map policy for the SOI. It was, like, safeguarding its own property,” she added.

But, more pertinently, even today the scale of the OSMs remains at 1:50,000, which, while good enough for several applications, including city guides, is just not good enough for GIS applications, she pointed out. “While 1:50K is the basic, you need larger scales if you are cutting an irrigation channel or building a check dam or a housing colony,” she said. But, according to DST sources, the SOI to date has been able to generate 1:25K maps only for about 40 per cent of the country’s area even though conversion of 60 per cent (to WGS-84) has been completed. Today, for example, a typical front-ranking Indian GIS company makes maps of scale up to 1:2,500 on the basis



of freely available satellite imagery.

Meanwhile, consistent with the provisions of the Remote Sensing Data Policy of 2001, the National Remote Sensing Agency (NRSA), a society under the Department of Space (DOS), also began to generate maps using its satellite imagery (of 5.8 m resolution), the SOI's GCP data on Everest (available to it as it is a government agency) and its own GPS measurements of the same GCPs on WGS-84. As regards the security aspect, the NRSA obtained shape files of VAs/VPs from the SOI and used them to remove VAs/VPs from its maps.

According to ISRO sources, this led to some turf wars between the NRSA and the SOI, with the latter questioning the legitimacy of the former to make maps as the NRSA was not even a government department. This was one of the reasons why the NRSA was made into a centre under ISRO in 2008. Now the National Remote Sensing Centre (NRSC) generates maps consistent with the updated RSDP-2011, which allows open availability of satellite data up to 1 m resolution. This translates to 1:25K topographic maps and 1:10K thematic maps. While thematic maps are available to the public, topographic maps are only for government use. Once Cartosat-3, with sub-metre resolution capability, is launched, ISRO/the NRSC should be able to provide maps of 1:5,000 scale.

From the GIS community perspective, there were some issues with the RSDP-2011 as well when it came to sourcing high-resolution satellite imagery (of ISRO or others) from the NRSC. The policy mandates that all high-resolution images (1 m and less) be acquired only through the NRSC and after clearance by the High Resolution Image Clearance Committee (HRC).





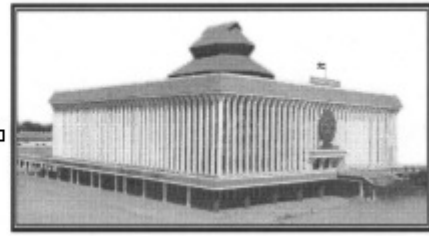
There were two problems with this: one, this could not be enforced because these images could be sourced online; and, two, the HRC took an inordinately long time to approve requests for data. “You go to Dubai or Singapore and you can get these at a much cheaper rate and without the hassles of the HRC,” said a former NRSA official. “In fact, you can order them through agents who have shops just next to the NRSC itself. Why would they come to the NRSC at all?” he asked.

### **THEN CAME GOOGLE EARTH**

It was around this time that Google Earth started to make its worldwide maps available to anybody online. Sourcing geospatial data from multiple sources, including satellites with sub-metre resolution imagery and crowdsourcing of GCP data and ground truth information through open public campaigns such as “Mapathon” and “Map Thy Neighbourhood”, Google Earth was providing extremely detailed maps, with VAs and VPs, and these were far more (FRONTLINE) accurate than the SOI’s largest scale topographic maps. Today, the best resolution imagery and maps are available to the GIS community from Google Earth. So why would anyone go to the SOI?

This was a big jolt to the Indian establishment, particularly the security agencies. Of particular concern was the wrong depiction of the country’s international boundaries by big geospatial portals such as Google. While this was a legitimate concern, the Indian government could do nothing about it. According to a source in the Department of Electronics and Information Technology (DEITY), the government tried talking to Google, who basically said “nothing doing”.

Google would come down to using maps used by the United Nations, but



even that was not acceptable because U.N. maps show the borders with China and Pakistan as disputed. Moreover, all the data on India that Google generates is located in some server in the U.S. because India is not able to provide Google and the like the digital infrastructure to locate their servers (including the Cloud) in the country, said the source.

Google's argument was, "You provide the correct map at the required scale and we will use it." But therein lies the rub. The SOI did not have data at scales larger than 1:50K or at best 1:25K when Google Earth was making available maps at 1:5,000 scale or even less. *Also*, from the security perspective, it was a catch-22 situation; the SOI could obviously not provide Google shape files like it did for the NRSA for it to remove the VAs/VPs from its online imagery and maps. According to the DEITY source, Google was even prepared to use the NRSC data, provided it had 20 cm resolution data, but ISRO's IRS system does not yet have that capability.

One could ask how China was able to make Google listen to it. China had got its act together by about 2002 or so. It could force Google on its terms once it had all large-scale geospatial data on WGS-84, which it could ask Google to use. The same were also available to all Chinese stakeholders, the GIS industry in particular. The problem in India, thus, was the failure on the part of the SOI to be able to widely disseminate security-vetted and updated maps of sufficiently large scale (both analogue and digital) in time-2005 was already too late with the correct international boundaries.

"The geospatial market should have been flooded," said Manosi Lahiri, "You tie yourself in knots by saying that I cannot distribute digital data. If you



just put the international boundaries acceptable to you in different scales, including the ground scale, then it is easier for you to say to Google or whoever that I am not going to accept anything else except this,” she said.

### **GEOSPATIAL INFORMATION POLICY**

A reliable DST source said the department had proposed updating the SOI infrastructure so that it would be able to generate 1:10,000 scale maps for the entire country with support from ISRO/the NRSC, consistent with RSDP-2011. The estimated cost of doing this was about Rs.1,800 crore and this was included in the Twelfth Plan (2012-17) outlay of Rs.3,000 crore for a National Geospatial Information System (NGIS). But, to date, the total budgeted outlay for the SOI has been to the tune of Rs.1,300 crore (including a Plan component of about Rs.150 crore) only.

Following inter-ministerial discussions in 2010-11, the DST was entrusted with the task of drawing up a policy document and a draft Bill. The DST was not too keen on taking up the latter part but finally agreed to at a meeting of the Committee of Secretaries in 2011. Around the same time, the DST gave the National Institute of Advanced Studies (NIAS), Bengaluru, the responsibility of preparing a report that could be the basis for inputs towards a geospatial policy framework. The report, titled “Perspectives for a National GI Policy (including a National GI Policy Draft)”, came out in November 2012. “The DST was not in favour of a Bill on any matter that did not flow from a coherent policy. Hence, the department was not in favour of a stand-alone Geospatial Data Regulatory Bill,” the DST source said. “The DST wanted to enunciate a sound and consistent policy towards public access to high-resolution open series maps,” the source said. Following the NIAS report,



the DST came out with a draft Bill called “Vetting Imageries and Geological Information for Licensing (VIGIL)”. “But this did not seem acceptable to the MHA and the MoD because, for some reason, nothing happened for three years,” the DST source said.

But events such as the Pathankot attack seem to have shaken the security agencies, and they seem to have come out with the Bill in haste in an act of desperation. “If INGIS, the policy (NGP-2016] and the Bill are made coherent with each other and converted into a complementing support system, it would be valuable. What we are seeing is that the Bill and the policy are being issued at the same time, with the Bill outweighing defence considerations over the use of geospatial products for developmental needs,” said the DST source. But, according to a very reliable GiS industry source who works closely with the defence establishment, the defence services themselves rely on external agencies to generate large scale maps based on high-resolution satellite data. Apparently, they share SOI’s topographic data with these agencies for orthorectification purposes. If that indeed is true, then the Bill is highly hypocritical.

## **DIVERGENCE OF VIEWS**

This divergence of views on geospatial data is now patently evident, with the DST espousing a more liberal policy and the MHA and MoD taking a hardened position as reflected in the released draft. The DST’s perspective, in fact, was reflected in its National Data Sharing and Access Policy of 2012 itself- which called for all government departments to categorise the respective data holdings into a “negative list” and an “open access list” so that the latter could be made available freely to all- and in NGP-2016 as well. In the Bill,



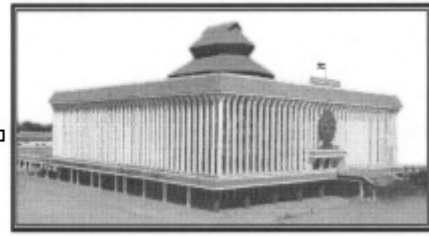
three basic issues have been clubbed together, and its impact on each one needs to be discussed separately: (a) Depiction of the international boundary of India; (b) the internal security of the country in terms of protecting YAs and VPs from external threats; and (c) geospatial information of a non sensitive nature that the general user community needs.

As Manosi Lahiri said, the first has nothing to do with geospatial information. It is a political decision. “There are disputed areas on the borders. But that’s not my business as a user. So many countries have disputed boundaries. What we believe is our territory must be correctly shown, And that has nothing to do with the second either, which is internal security. So why penalise the user?”

Major General R. Sivakumar, the former CEO of the NSDI, said, wrong depictions of territorial boundaries of the country can be dealt with under Sections 397/401 and 482 of the Code of Criminal Procedure, 1973, and Section 2(2) of the Criminal Law Amendment (Amending) Act, 1990, which stipulates a penalty of imprisonment up to six months. But it has never been imposed, though many a time such cases are reported both in printed maps and on the Web. “The government has been debating these issues for over a decade and felt that a deterrent punishment would ensure compliance. However, the present draft Bill makes all actions relating to locational information illegal unless vetted,” said Sivakumar.

## GOVERNMENT FRUSTRATION

The security part is really a reflection of the frustration the government feels for not being able to control the level of detail that is being seen all over



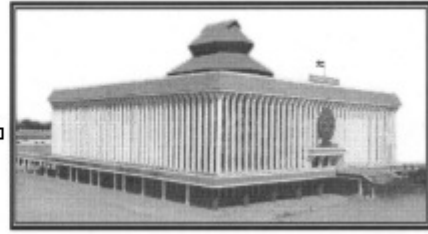
the world. “Whatever rules it makes apply to India and its citizens. So, in other words, the government is doing exactly the same thing as it has always done: Holding back information from its own people at our institutions, including security institutions that will not see these VAs/VP’s. While we don’t know what these VAs/VPs are, which probably are constantly changing, the same can be seen by anybody overseas. But I have to admit that it is a difficult situation for the security agencies,” said Manosi Lahiri.

“The global opening of mapping at the micro level and making it available to everyone for free has had a lot of impact on defence and security agencies. But much of it could probably have been prevented if you had kept pace with technology and acted in time. The security probably is already compromised because the VAs and VI’s are visible to anyone overseas downloading a high resolution image from some satellite, not necessarily Google.” said a former ISRO official,

As regards the geospatial Part (C), the conundrums concerning the GIS community have already been discussed above. In particular, what happens to usage of geospatial information by researchers and students in academia? Purely from the heavy penal provisions of the Bill, one can say that it appears to be aimed at someone like Google, but the innocent millions routinely using geospatial information that is freely available to everyone around the world could end up becoming the unintended targets .

“If the chief provision of the Bill is accepted, acquisition of data through satellites even for innocent purposes like using Google maps in cars may become illegal,” said B.K. Srivastava, a former General Manager of Survey and Cartography of the Airports Authority of India and now an aviation consultant. More pertinently, Srivastava, who uses geospatial information





to provide aviation safety solutions, pointed out that the Bill's provision would make acquisition of satellite data through GPS/GPS, etl'" for the safety of aircraft operations illegal and this would be detrimental to aircraft safety.

Realistically speaking, therefore, from the three perspectives of territorial integrity, internal security and dissemination of geospatial information, the Bill, as it stands, is not implementable. But, given the jingoistic outlook of the ruling party's parliamentarians, the Bill may become an Act tomorrow.

As a GIS observer put it: "The irony of it would be extreme when, as we move towards 'Digital India', some innocent and honest Indian using a smartphone GIS app would be caught by the local police and hauled up because somebody down there interpreted the Act and determined that the person was a violator of the Geospatial Information Regulation Act. But one only hopes that pragmatism and wisdom prevail and the inconsistencies between the policy, the Bill and the NGIS are addressed convincingly and a realistic balance is struck between security considerations and geospatial information needs for development."

FRONTLINE

22 JULY 2016



FOCUS



*BOOK REVIEW*

A Review of the Book 'On Nationalism' by Romila Thapar,  
A.G.Noorani and Sadanand Menon

## Through three prisms

SHIV VISVANATHAN

**Essays that examine the idea of nationalism through the lens of  
politics, law and culture, opening the floor to wider debate**

I am one of those readers who thinks of a publishing company as a living entity, a huge commons of ideas that cooks new books and serves them up in interesting ways. Harper Perennial recently published UR Ananthamurthi's moving last testimony, *From Hindutva to Hind Swaraj*, a manifesto explaining why he could not stay in a Modi-dominated India. Aleph has now come up with *On Nationalism*, a triptych of essays, each delightfully different, each articulating a world view that needs to be treasured and protected. The three critique nationalism, in terms of politics, law. and culture. As you read



the feisty arguments, they show you how citizenship and scholarship can be fun. On *Nationalism* is the cleansing of a concept that has been muddled too long.

**Begin any way you like.** I began with the third essay by Sadanand Menon. He reads nationalism with a photographic eye as visuality, language and performance, contending its gaze has been distorted. He emphasizes the need for new metaphors to define new ways of looking and living. Menon plays white with delightful anecdote, a story I would love to steal. It is a crowded conference at ICCR where George Lechner, the head of the Goethe Institute is introducing celebrated choreographer Pina Bausch. Lechner begins by asking Bausch to concede the Germanness of her work. The dancer denies it, blowing smoke rings of protest. At the third prompting, Pina retorts; “George, had I been a bird, would you have called me a German bird?”

Menon reflects on the relationship between culture and nationalism, citing *Gora* and Tagore’s essays to note that the poet always treated nationalism as an evil. For Tagore, humanity made more sense than the corset called ‘nation state’. For Menon, the virus, both real and imaginary, is cultural nationalism. He warns that in India today, cultural nationalism masquerading as a public good is displacing the real issues before the country. Menon shows that when imaginary homelands become real, the nightmare called nationalism begins. History and scientific proof can do little to contain emotional charge of this irrational world.



At the core of this devastation is the collective RSS mind, obsessed with cleansing history of the hybrid and the syncretic. Cultural purism like racial purism is an act of cleansing national identity into an imaginary sense of authenticity. Using Reich and the Frankfurt School, Menon puts the RSS on the couch of history and finds an obsessive-compulsive attempt to sanitise the past, terrorise the present, and threaten the future.

Oddly, Menon's narrative breaks down as he reaches the present, becoming more ideological and less pluralist; his narrative machismo losing out to the gentler storytelling of a U.R. Ananthamoorthy. URA never demonises Savarkar or the RSS but shows how categories create self-fulfilling realities. There is a pluralism here that Menon's work lacks, its force becoming its weakness. His is a critique of the RSS without self-reflectiveness, and by the time he moves to JNU, he is on weaker ground. The recent events at the university showed solidarity between teacher and student, emphasised the role of university in civil society, but there was a touch of narcissism. The JNU debates did not add anything new to the understanding of nationalism. A Gandhi or a Tagore still sounds fresh and immediate in a way the Andersons do not. One wishes Menon had listened to his old friends, the chemist, C.V. Sheshadri, and URA more. Their modesty was not softness, yet their understanding of science and the nation has a resilience that the Left critique still needs to develop.



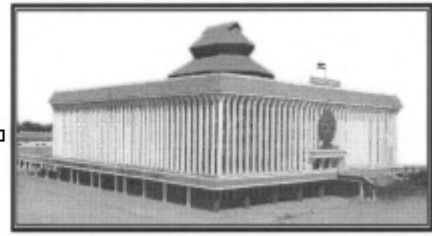
The second essay in the book is a long one by Ghafoor Noorani, a brilliant populariser of legal controversies, outlining both the career of concepts and their fate in the legislature and the law courts, Noorani seeks to interrogate the idea of sedition, a colonial invention.

In fact, if one reads the essays of the historian Dharampal, one discovers that the right to secession and sedition were a part of tradition, and villagers often abandoned an arbitrary king.

Noorani follows the fate of the concept from colonial to modern times and outlines its irony. Most of our great nationalist leaders from Tilak to Gandhi were subject to charges of sedition and developed what Noorani calls “a deep loathing for the concept” How did it become the jewel in the crown for the BJP regime?

**Noorani explains** that when the drafting committee of the constituent assembly began work, K.M. Munshi demanded that the term be deleted. He argued that the essence of democracy is criticism of the government. Accordingly, the revised draft constitution of 1949 “omitted sedition by a deliberate considered decision”. By 1951, sedition was constructed more affably as a “reasonable restriction on the right to speech in the interest of the security of the state, and in the interests of maintaining friendly relations with foreign states.”

In *Romila Thapar vs State of Madras*, Justice Patanjali Shastri ruled that criticism of the government or exciting disaffection is not sedition. Noorani In *Romila Thapar vs State of Madras*, Justice patanjali Shastri ruled that criticism



the government or exciting disaffection is not sedition. Noorani says, in sheer delight, that “it is no function of the court to recycle statutory garbage”. However, in 1962, the court in Kedar Nath Singh vs. State of Bihar did just that, with an argument so illiterate, says Noorani, that “an undergraduate whose essay on sedition contained blemishes such as these would earn a deserved reprimand.”

Today, sedition has become colonialism’s most disabling gift to a free nation. Noorani’s essay is a superb fable on the obtuseness of law when it fails to be a self-correcting system.

The book is anchored by the first essay, a careful survey of the concept of nationalism and its foibles by Romila Thapar. The language is low-key, the essay grounded in footnotes, the caveats providing a perfect display of the rules and rituals of scholarship.

Thapar has been a lifelong teacher dedicated not just to the idea of a secular democracy but to the ideal of a plural university. She explains that one needs complete freedom of expression when discussing not just the kind of nation one wants but the university we dream of.

**Nation-building** for her is not separate from university-building. The turbulence of the university is part of the nation and to suppress one is to emasculate the other. Scholarship becomes necessarily anti-national when every act of dissent is read as sedition. One only wishes that Thapar had explored





the contradictions of a secular history and a secular democracy, she black-boxes the terms when she could have been more open to the critique around them.

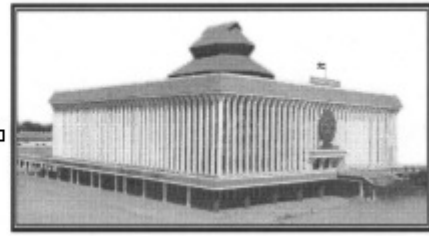
As a whole, the book's power and passion are impressive. Yet, one senses that it is a prelude because a lot is left unsaid. For instance, Thapar talks of interdisciplinarity and yet there is little exploration of the history of science in the history of nationalism. The relationship between science and nationalism in India is a playful one; Indian nationalism invented the ideas of a post- German science and a post-industrial society. The encounter between religion and science was more pluralistic than the current relationship of religion and state.

In fact, one of the shortcomings of the JNU department of history is that it is illiterate about the history of science, which is critical to the debates it is dealing with today. This moment of contestation might be an appropriate time for JNU to correct this anomaly and explore issues the present regime is wooden or ignorant about. But may be that is the power of the book. It becomes an invitation to new debates, reconstructing concepts critical to the future of our society.

*Shiv Visvanathon is a professor in the faculty of law at Jindal Global University*

The Hindu  
3 July, 2016





## **Resume of Business -**

### **Eighth session of the Sixteenth Lok Sabha**

The Eighth Session of the Sixteenth Lok Sabha commenced on 25 April 2016 and concluded on 11 May 2016. In all, the House held 13 sittings spread over 93 hours and 45 minutes.

As you are aware, the Budget (Railways) for the year 2016-2017 was presented to the House by the Minister of Railways, Shri Suresh Prabhu, on 25 February 2016, and the Budget (General) for the year 2016-2017 was presented on 29 February 2016 by the Minister of Finance, Shri Arun Jaitley. The Vote on Account (Railways) and the Vote on Account in case of the General Budget was approved by Lok Sabha on 9 and 14 March, 2016, respectively. The subsequent stage of budgetary process was set in motion in the Eighth Session.

During the Session, the Demands for Grants (Railways) for 2016-17 were discussed on 26 April 2016. The discussion lasted 4 hours and 44 minutes. A total of 248 cut motions were admitted and circulated, out of which 232 cut motions were moved and negatived. The Demands for Grants (Railways) for 2016-17 were voted in full the same day and the relevant Appropriation Bill was passed.

The Demands for Grants in respect of the following Ministries were discussed and voted in full: (i) Ministry of Development of North Eastern Region, on 27 April 2016; (ii) Ministry of Skill Development and Entrepreneurship, on 28 April 2016; (iii) Ministry of Social Justice and Empowerment, on 29 April and 2 May 2016; (iv) Ministry of Civil Aviation and Ministry of Tourism (discussed together), on 2 and 3 May 2016; and (v) Ministry of Housing and Urban Poverty Alleviation, on 3 May 2016.

Five cut motions were moved in respect of the Demands for Grants relating to the Ministry of Development of North Eastern Region; two each in respect of the Demands for Grants relating to the Ministry of Skill Development and Entrepreneurship, the Ministry of Social Justice and Empowerment, and the Ministry of Civil Aviation; twenty-seven in respect of the Demands for Grants relating to the Ministry of Tourism; and seventeen in respect of the Demands for Grants relating to



the Ministry of Housing and Urban Poverty Alleviation. All the cut motions were negatived.

All the other outstanding Demands for Grants in respect of the Budget (General) for 2016-2017 pertaining to the remaining Ministries were submitted to the vote of the House and voted in full on 3 May 2016 and the relevant Appropriation Bill was passed.

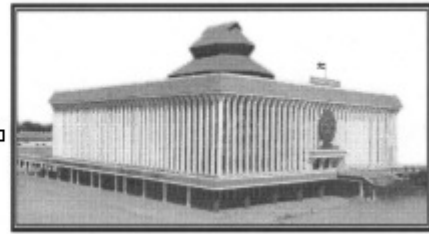
Later, after a detailed discussion on 4 and 5 May, the Finance Bill, 2016 was passed by the House on 5 May.

The Budget in respect of the State of Uttarakhand for the year 2016-17, was presented to Lok Sabha by the Minister of Finance, Shri Arun Jaitley, on 9 May 2016. The Demands for Grants on Account (Uttarakhand) for 2016-17 were discussed and voted in full the same day. Thereafter, the relevant Appropriation Bill was passed.

On 5 May 2016, Shri Jagdambika Pal, member, initiated a discussion under Rule 193 on the situation arising out of drought and drinking water crisis in many States and the need to consider inter-linking of rivers and water resource management for sustainable solution to mitigate the crisis. The discussion continued on 11 May. In all, 101 members took part in the discussion which concluded with the reply of the Minister of Agriculture, Shri Radha Mohan Singh.

On 6 May 2016, Shri Anurag Singh Thakur called the attention of the Minister of Defence regarding the recent disclosure by the Court of Appeals, Milan, Italy, on alleged irregularities in the Agusta Westland Helicopter deal, 2013. In response, the Minister of Defence, Shri Manohar Parrikar, made a statement and replied to the clarifications sought by the members.

Members also raised issues of urgent public importance by way of submissions on: (i) the reported attempts to destabilize elected State Governments thereby undermining the Constitution; (ii) the fire cracker accident in a temple in Kollam, Kerala; (iii) the problems faced by tobacco farmers in Karnataka and Andhra Pradesh; (iv) the situation arising due to the order of Hon'ble Supreme Court relating to Medical Entrance Test in the country; (v) the need for Central Government



intervention to stop forest fire raging in Uttarakhand and other parts of northern India; (vi) the problem faced by onion growers of Rajasthan, Maharashtra and Madhya Pradesh despite a bumper crop; and (vii) the reported assault and murder of a dalit law student at Perumbavoor near Cochin, Kerala.

As many as 23 Statements were made by the Ministers under Rule 372. These included the statement made by the Minister of Finance on behalf of the Minister of External Affairs regarding the order of the Arbitral Tribunal on the Law of the Sea concerning the dispute between India and Italy on the Enrica Lexie incident and the statement by the Minister of Road Transport and Highways and Minister of Shipping regarding the successful organisation of the Maritime India Summit 2016 at Mumbai.

During the Session, 260 Starred Questions were listed, out of which 76 Questions were answered orally. Written replies to the remaining Starred Questions along with answers to 2,990 Unstarred Questions were laid on the Table.

Members made use of Rule 377 to raise 236 matters, mostly pertaining to their constituencies. Further, 371 matters of urgent public importance were raised by the members after the Question Hour and after completion of formal business of the House by sitting late in the evenings. During the Session, two petitions were presented in the House.

In all, 55 reports of the Departmentally-related Standing Committees were presented to the House during the Eighth Session.

Coming to the legislative business, four Government Bills were introduced in the House and two Bills as passed by Rajya Sabha were laid on the Table. Ten Bills were passed by the House during the Session, including the Compensatory Afforestation Fund Bill, 2016; the Insolvency and Bankruptcy Code, 2016, as reported by Joint Committee; and the Anti Hijacking Bill, 2016, as passed by Rajya Sabha.

The Compensatory Afforestation Fund Bill, 2016 sought to provide for the establishment of funds under the public accounts of India and the public accounts of each State and crediting thereto the monies received from the user agencies towards compensatory afforestation, additional compensatory afforestation, penal compensatory afforestation, net present value and all other amounts recovered from such agencies under the Forest (Conservation) Act, 1980; and constitution of National



Authority and State Authorities for administration of the funds and to utilise the monies so collected for undertaking artificial regeneration (plantations), assisted natural regeneration, protection of forests, forest related infrastructure development, Green India Programme, wildlife protection and other related activities.

The Insolvency and Bankruptcy Code, 2016 sought to consolidate and amend the laws relating to reorganisation and insolvency resolution of corporate persons, partnership firms and individuals in a time bound manner for maximisation of value of assets of such persons, to promote entrepreneurship, availability of credit and balance the interests of all the stakeholders, including alteration in the order of priority of payment of Government dues, and to establish an Insolvency and Bankruptcy Fund.

The Anti-Hijacking Bill, 2016 sought to give effect to the provisions of the Convention for the Suppression of Unlawful Seizure of Aircraft and the Protocol Supplementary to the Convention.

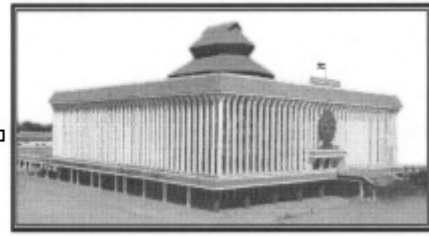
On the last day of the Session, on 11 May, the Finance Minister Shri Arun Jaitley, moved a motion for appointment of a Joint Committee of both the Houses with regard to the Enforcement of Security Interest and Recovery of Debts Laws and Miscellaneous Provisions (Amendment) Bill, 2016. The motion was adopted by the House.

As far as Private Members' Business is concerned, 33 Bills were introduced during the Session. The Rights of Transgender Persons Bill, 2014, as passed by Rajya Sabha, had been moved by Shri Baijayant 'Jay' Panda on 26 February 2016 and discussed on 11 March during the Seventh Session. The Bill was further taken up on 29 April 2016, and remained part-discussed.

As regards Private Members' Resolutions, the Resolution urging the Government to take steps to ensure the welfare of Employees Provident Fund Pensioners, moved by Shri N.K. Premachandran on 11 December 2015, was taken up on 6 May 2016 and remained part-discussed.

During the Session, the Hon'ble Speaker, Smt. Sumitra Mahajan, made references to the passing away of Sarvashri Birbal, Lal Muni Choubey, Ananda Gajapathi Poosapati Raju, Balraj Madhok, Rana Bahadur Singh, Dr. C. Silvera, Dr. Amrit Lal Bharti and Shrimati Chandra Prabha Urs, all former members.

References were made in the House on: (i) terrorist attack in Brussels on 22 March 2016; (ii) loss of lives of more than 600 persons due to earthquake in



Ecuador on 16 April 2016; (iii) reported loss of lives of about 100 persons due to earthquakes in Japan; (iv) killing of 7 CRPF personnel in a terrorist attack in the Dantewada region, Chhattisgarh, on 30 March 2016; (v) reported loss of lives of 27 persons and injuries to 80 persons during collapse of a part of under-construction flyover in Kolkata on 31 March 2016; (vi) reported loss of lives of 112 persons and injuries to several others due to explosion of fire crackers in a temple in Kollam, Kerala, on 10 April 2016; (vii) reported loss of lives of 30 persons, including a child, and injuries to 8 others due to fall of a bus into a gorge in Deogarh district, Odisha, on 17 April 2016; (viii) reported loss of lives of 19 persons in a landslide in Tawang district, Arunachal Pradesh, on 23 April 2016; and (ix) death of 10 persons and injuries to 150 others due to thunderstorm followed by heavy rains in Simhastha Kumbh, Ujjain, Madhya Pradesh, on 5 May 2016.

The Hon'ble Speaker also made reference regarding the successful launch of the India Regional Navigation Satellite System (IRNSS-1 G) through the Polar Satellite Launch Vehicle (PSLV-C33) from Sriharikota, Andhra Pradesh, on 28 April 2016 and congratulated the Scientists and Technologists of the Indian Space Research Organisation.

A Parliamentary Delegation led by His Excellency Mr. Mikhail Myasnikovich Chairman of the Council of the Republic of the National Assembly of the Republic of Belarus, graced the Special Box of Lok Sabha on 11 May. Welcoming the distinguished guests, the Hon'ble Speaker extended the greetings of the House to the Parliament, the Government and the friendly people of the Republic of Belarus, and wished them a happy and fruitful stay in India.

As in the past, functions were held under the auspices of the Indian Parliamentary Group (IPG) to mark the birth anniversaries of Dr. B.R. Ambedkar (14 April); Pt. Motilal Nehru (6 May); Gurudev Rabindranath Tagore (9 May); and Swatantryaveer Vinayak Damodar Savarkar (28 May) in the Central Hall of Parliament House where the portraits of these illustrious leaders are put up. The Hon'ble Speaker joined Union Ministers, members of Parliament and other dignitaries in paying floral tributes to the leaders on these occasions. Besides, a function was held in the Central Hall of Parliament on the birth anniversary of the former Speaker of Lok Sabha Dr. Neelam Sanjiva Reddy (19 May). Booklets containing the profile of these leaders, brought out in Hindi and English by the Lok Sabha Secretariat, were distributed to the dignitaries present on the occasion.





The Speaker's Research Initiative conducted a two-day Workshop on 4 and 5 May 2016 on three inter-linked subjects, viz. (i) Drought and related agrarian issues; (ii) Drinking water management - problems and issues; and (iii) Interlinking of rivers for water management for the benefit of the members of Parliament. Inaugurating the Workshop, the Hon'ble Speaker emphasized that parliamentarians need to work together to overcome the drought-like situation in several parts of the country. Nearly 100 members of Lok Sabha and Rajya Sabha attended the Workshop on both days. Domain experts shared their rich, varied and grassroots experiences during the Workshop.

The Bureau of Parliamentary Studies and Training continued to organise various Courses and Programmes during the period.

A Familiarization Programme on Parliamentary Practices and Procedures for media persons accredited to the Legislative Assemblies of Goa, Gujarat and Maharashtra was organized by the Bureau which was attended by 70 participants. The Hon'ble Speaker Smt. Sumitra Mahajan addressed the media persons at the Valedictory function of the programme.

Five Appreciation Courses in Parliamentary Process and Procedures for the Probationers of all India and Central Services and for middle and senior level officials of the Government of India were organised by the Bureau. In all, 121 participants attended these Courses. In addition, one Appreciation Course in Parliamentary Processes and Procedures was organized for the Faculties of Universities and Colleges in the country which was attended by 114 participants. The Bureau also organised a Training Course in Parliamentary Processes and Procedures for the Students of Tata Institute of Social Sciences, Hyderabad, which was attended by 29 students.

The Bureau organised three International Study Visits for the benefit of 73 participants. Besides, sixteen Study Visits were organised for educational and other institutions from within the country covering 670 participants.

On the concluding day of the Session, the Hon'ble Speaker, in her Valedictory Address, said that in the recent past this was the first Lok Sabha Session in which the House was not adjourned even for a single minute due to interruptions. Further, the House had sat late for 15 hours and 46 minutes to transact urgent Government Business.

FOCUS



The Eighth Session of the Sixteenth Lok Sabha was adjourned sine die on 11 May 2016 after the playing of the National Song. The President of India prorogued the House on 19 May 2016.



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