

Early Networking History in Africa

African School of Internet
Governance

George Sadowsky

george.sadowsky@gmail.com

9 September 2018

Outline of presentation

- Post-colonial African readiness for ICT
- The role of infrastructure with an example
- Introduction of Internet in African countries
- More recent progress
- Some lessons learned
- Some sources for historical material
- Caveats
 - Views are my personal views and not necessarily the views of any organization with which I am or have been associated
 - Views are based largely on personal experience

Infrastructure issues

- Lack of all components of basic infrastructure
 - Surface transport – paved highways and railroads
 - Human skills and knowledge – information poverty
 - Educational facilities, universities, libraries
 - Professional and technical (people) networks
 - Integration into global groups; knowledge transfer
 - Electric power generation and distribution
- In later years (1990s), resistance to change
 - PTTs feared loss of revenue
 - Governments feared unknown disruptive forces

Ecosystem issues

- PTTs threatened by competition
- Regulators not prepared for new technology
- Colonial infrastructure patterns dominated
- Small, undeveloped, informal markets
- Colonial legacy left difficult environmental conditions

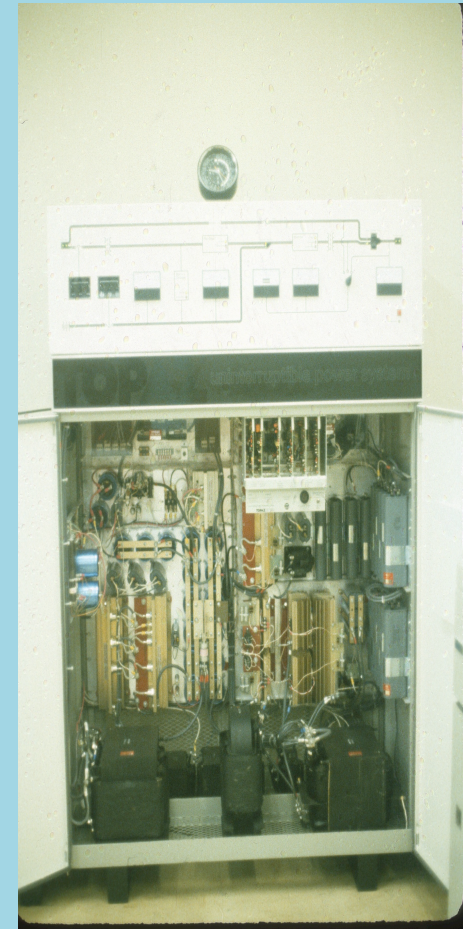
Initial Networking Efforts

- Methods depended upon global state of technical progress and local infrastructure
- Telex
- Store and forward: FidoNet, UUCP, BitNet
- LEO Satellites: HealthNet
- Early packet transmission: X25
- Internet over telephone circuits
- Permanent (routed) connections

Example: Rwanda in 1980

- 1980: First computer arrives in Rwanda
- Installation difficulties!
- Frustration and failure
- The enemy identified: Information Poverty

1980: Centre d'Informatique du Rwanda

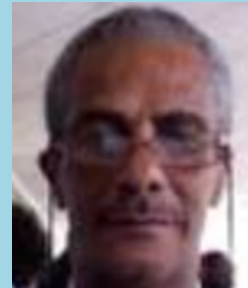


Fast forward to the late '80s ...

- (Micro-) Computers populate Africa
- Networks begin to appear
- NGOs needed and promoted networks
- Store and forward: Initially UUCP and FidoNet
- HealthNet's LEO (low earth orbiting satellite)
- Role of South African universities
- Internet champions for Africa emerge

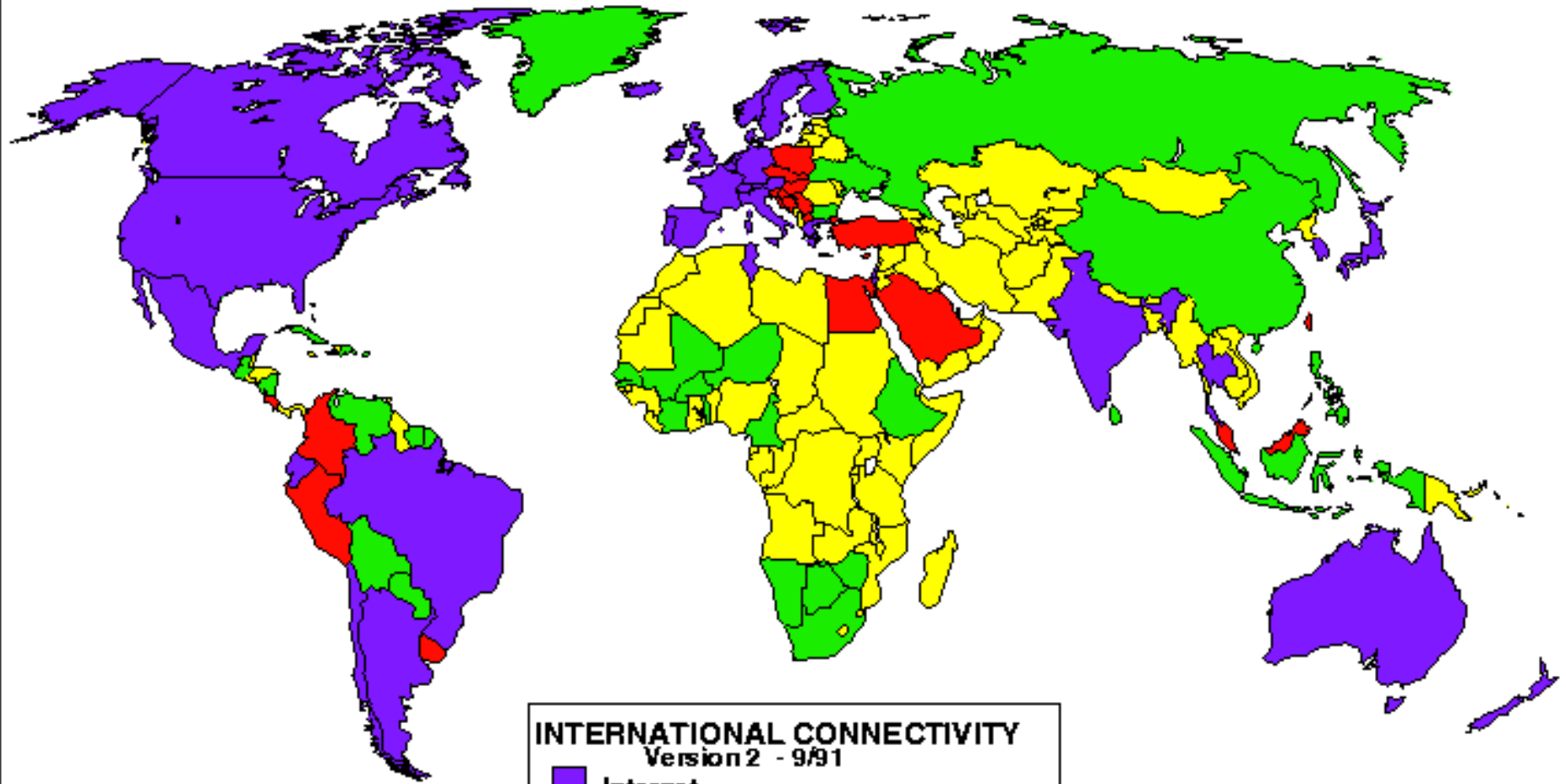
Some Internet champions for Africa

-



Milestones of the '90s

- 1992++: ISOC's INET training workshops
- 1995-6: U.S. Leland Initiative
- 1996++: INET training in French
- 1996: Action session in Montréal
- 1997: AISI initiative
- 1998: Important meeting in Cotonou
- Birthplace of AfriNIC



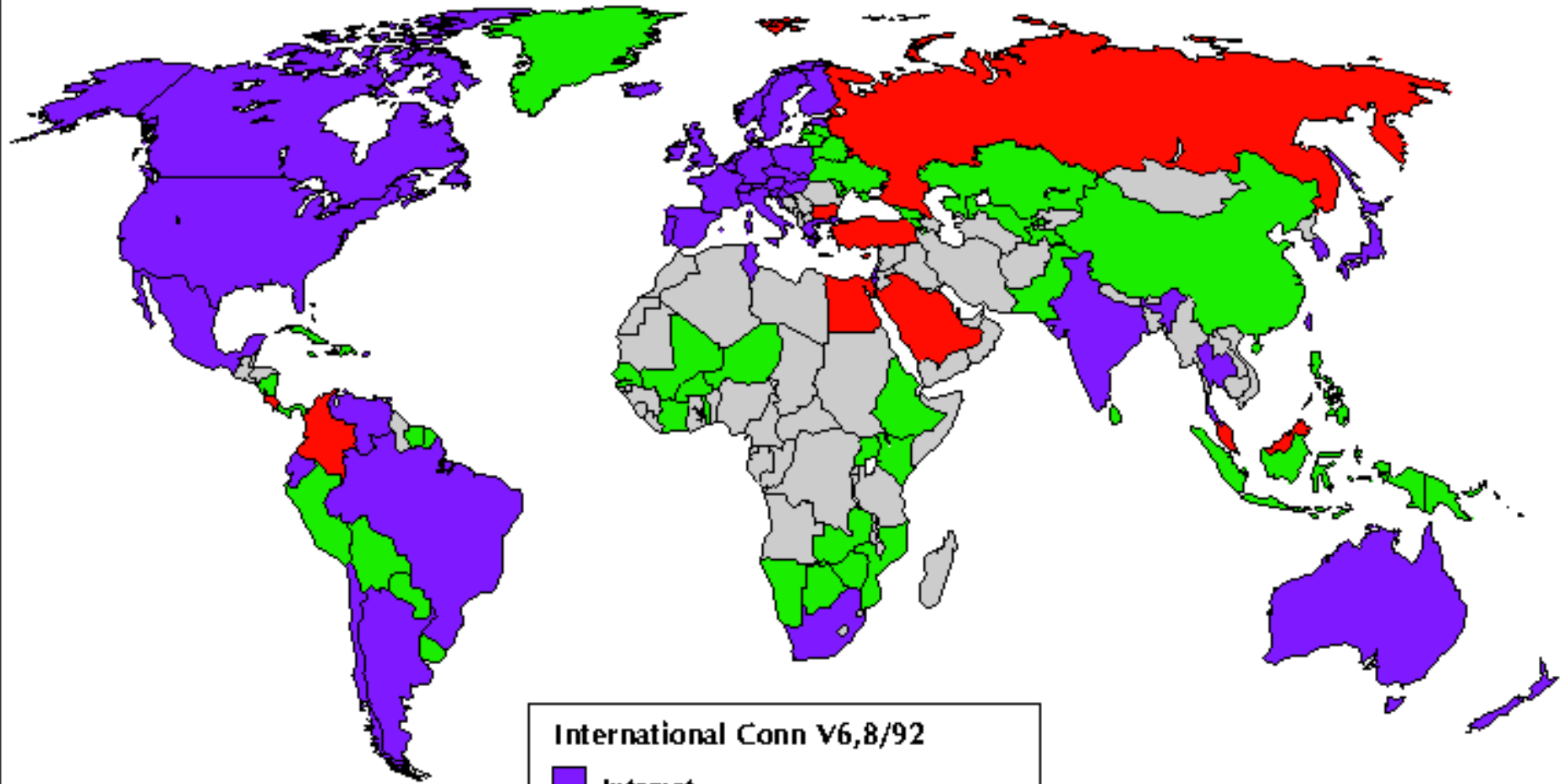
INTERNATIONAL CONNECTIVITY

Version 2 - 9/91





- Internet
- Bitnet but not Internet
- EMail Only (UUCP, FidoNet)
- No Connectivity

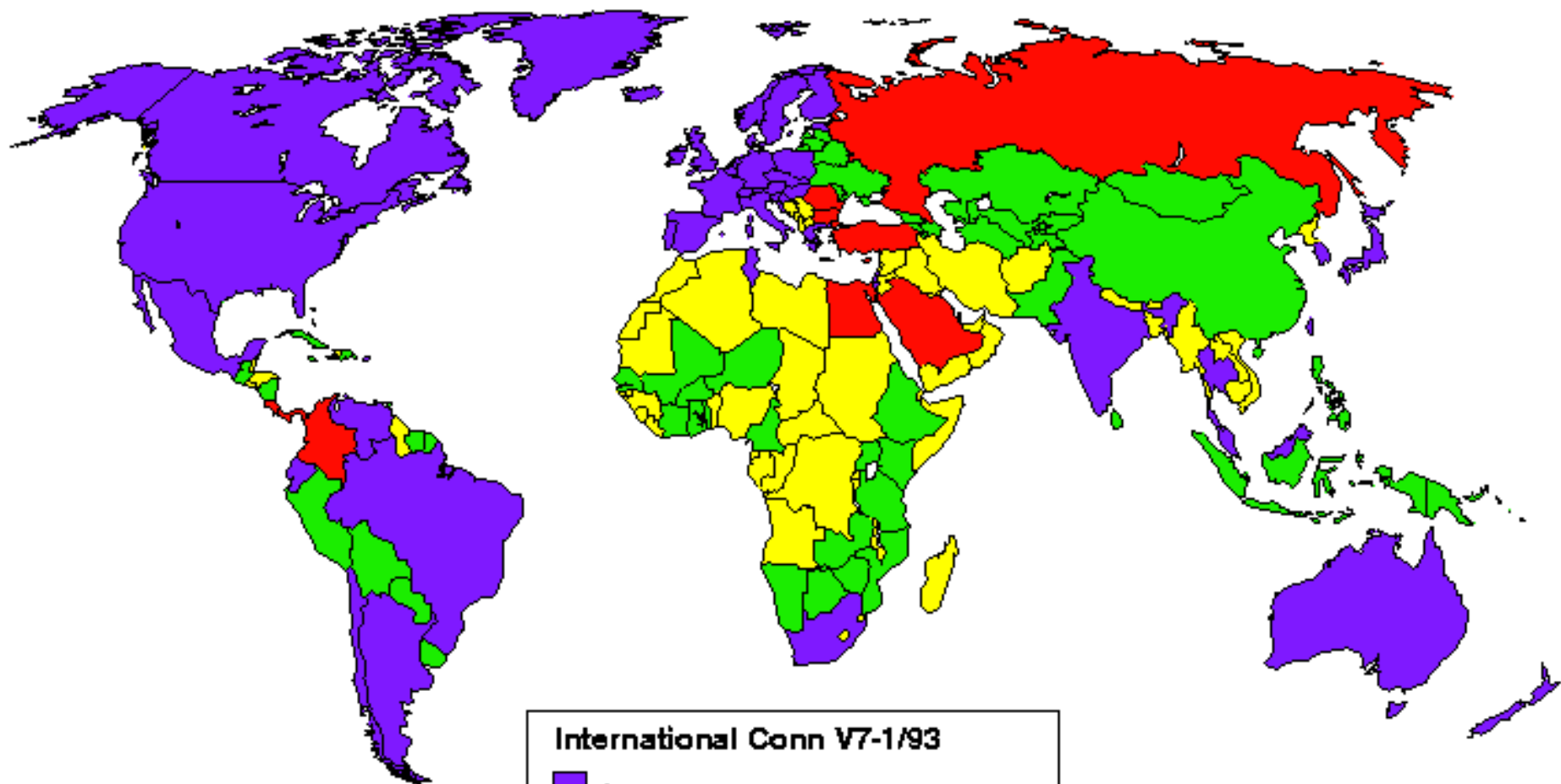
Copyright © 1991
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.

This map may be obtained via anonymous ftp
from ftp://ftp.wisc.edu/connctvty_table_directory



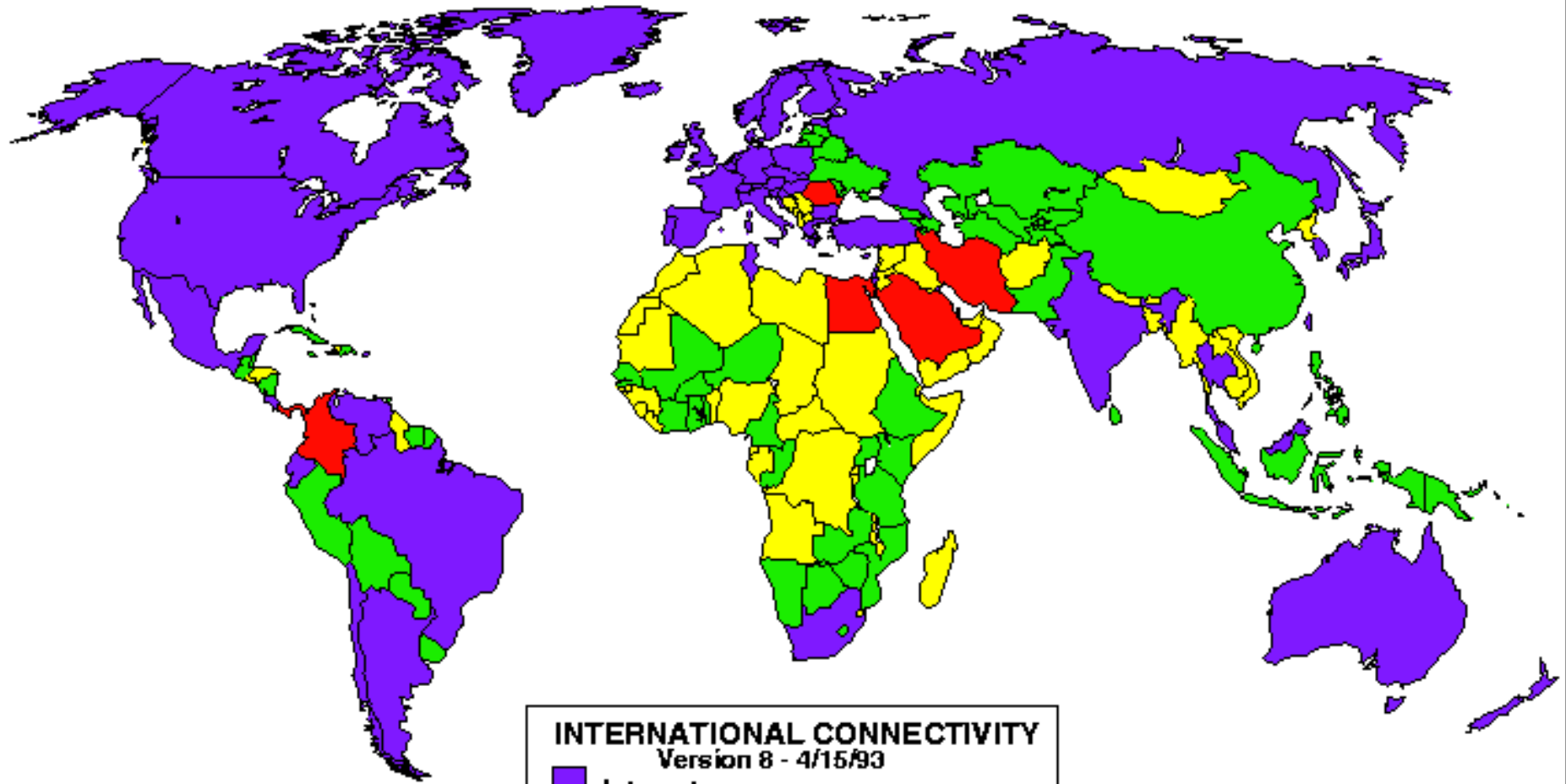
International Conn V6,8/92

-  Internet
-  BitNet but not Internet
-  EMail Only (UUCP, FidoNet, or OSI)
-  No Connectivity



International Conn V7-1/93

- Internet
- BitNet but not Internet
- EMail Only (UUCP, FidoNet, or OSI)
- No Connectivity

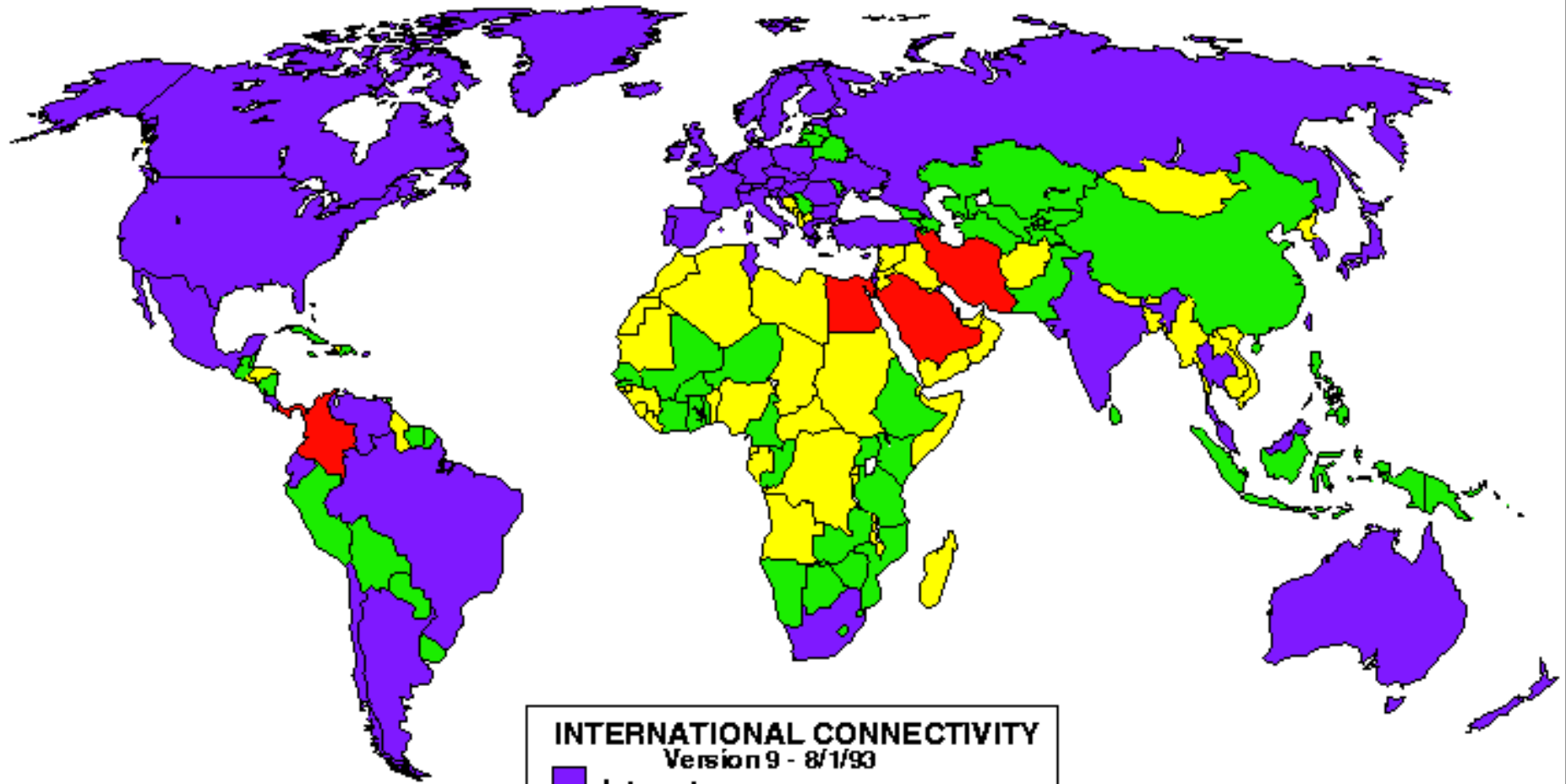


INTERNATIONAL CONNECTIVITY

Version 8 - 4/15/93





- Internet
- BitNet but not Internet
- EMail Only (UUCP, FidoNet, or OSI)
- No Connectivity

Copyright © 1993
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.

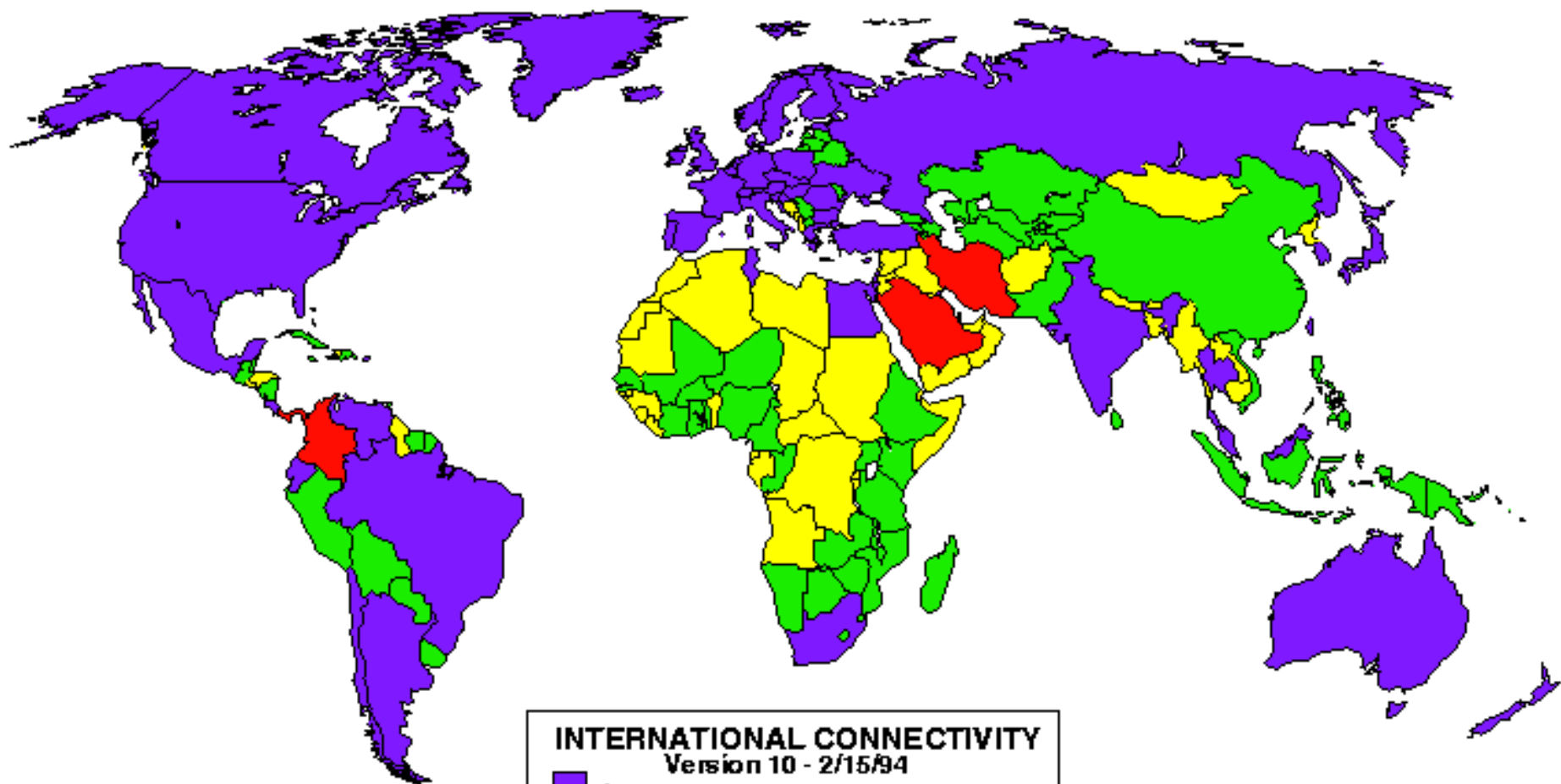


INTERNATIONAL CONNECTIVITY

Version 9 - 8/1/93

-  Internet
-  BitNet but not Internet
-  EMail Only (UUCP, FidoNet, or OSI)
-  No Connectivity

Copyright © 1993
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.



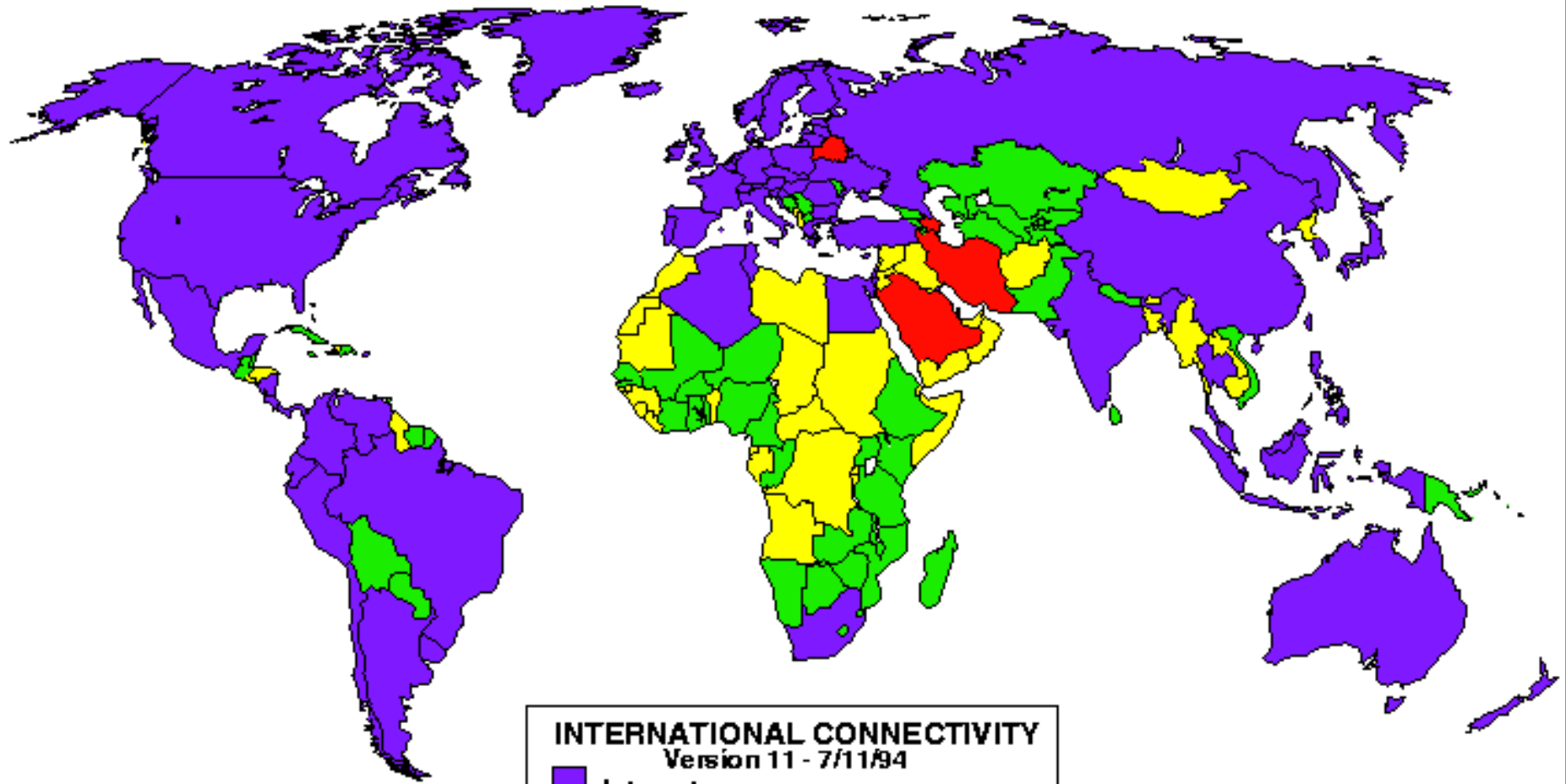
INTERNATIONAL CONNECTIVITY

Version 10 - 2/15/94

- Internet
- Bitnet but not Internet
- EMail Only (UUCP, FidoNet, or OSI)
- No Connectivity





Copyright © 1994
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.

This map may be obtained via anonymous ftp
from ftp://ftp.cc.wisc.edu/connctvty_table directory.

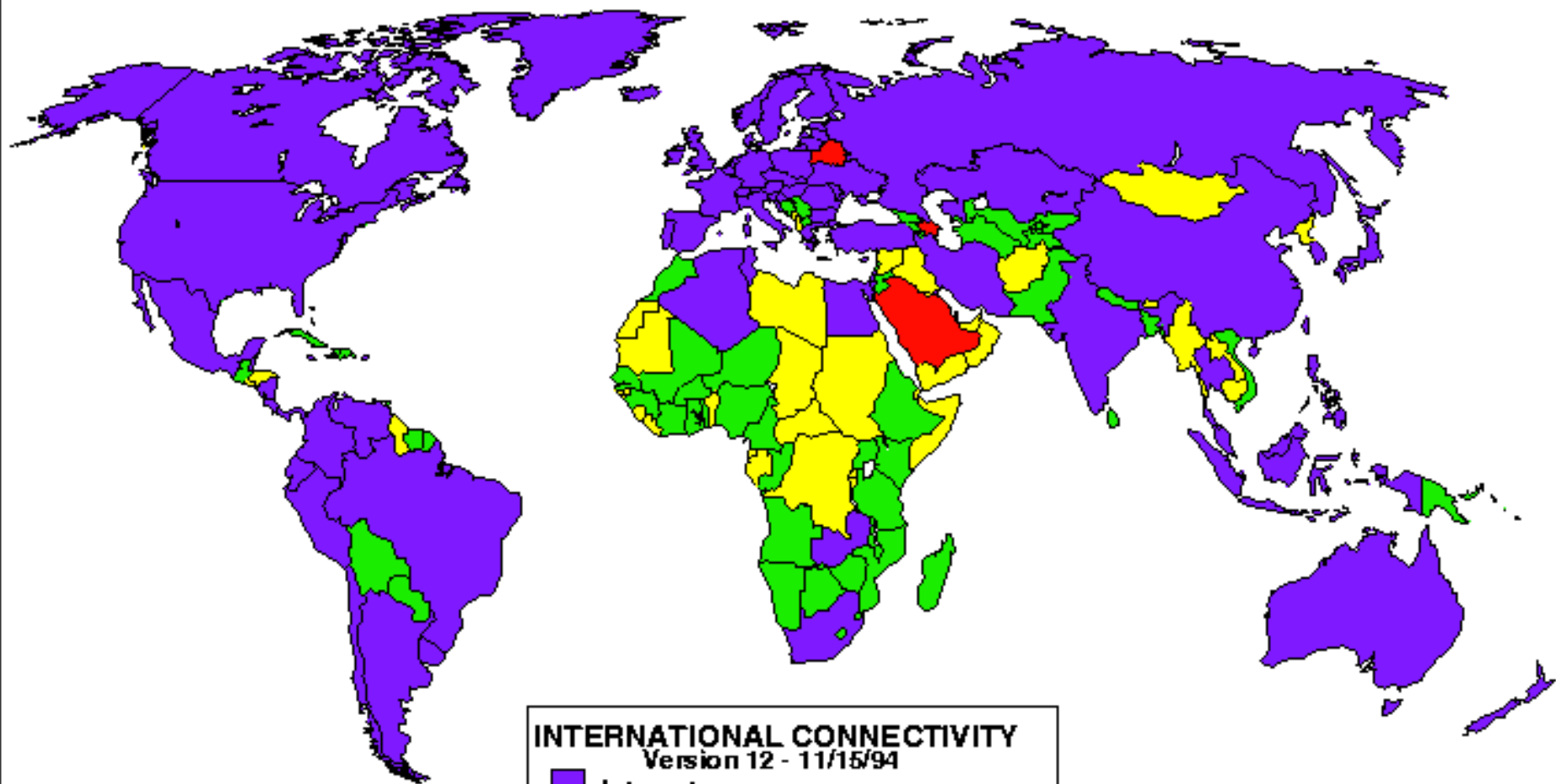


INTERNATIONAL CONNECTIVITY

Version 11 - 7/11/94

-  Internet
-  Bitnet but not Internet
-  EMail Only (UUCP, FidoNet, or OSI)
-  No Connectivity

Copyright © 1994
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.



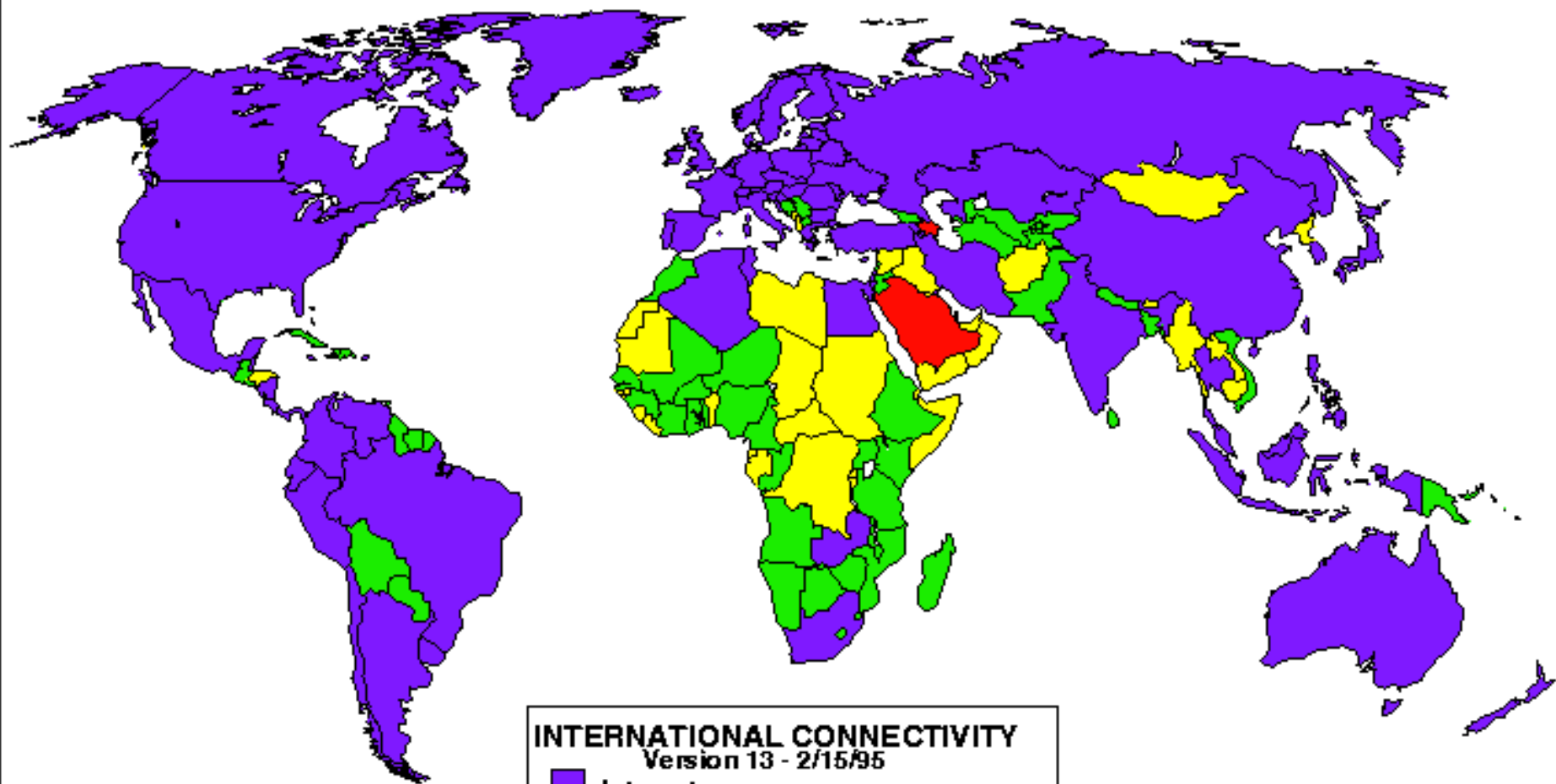
INTERNATIONAL CONNECTIVITY

Version 12 - 11/15/94

- Internet
- Bitnet but not Internet
- EMail Only (UUCP, FidoNet)
- No Connectivity





Copyright © 1994
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.

This map may be obtained via anonymous ftp
from <ftp://ftp.wisc.edu/connctvty/table/directory>

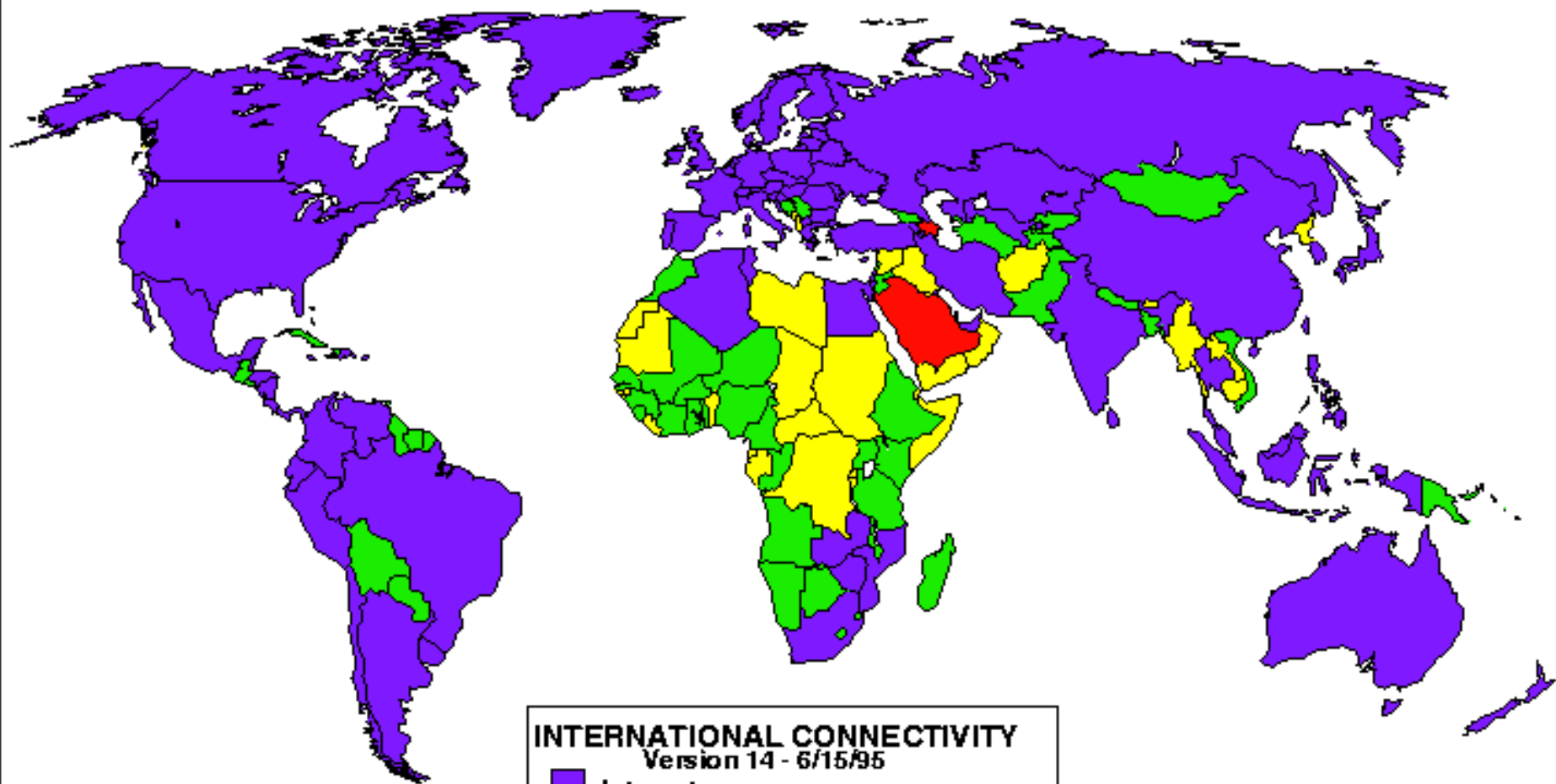


INTERNATIONAL CONNECTIVITY

Version 13 - 2/15/95





-  Internet
-  Bitnet but not Internet
-  EMail Only (UUCP, FidoNet)
-  No Connectivity

Copyright © 1995
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.

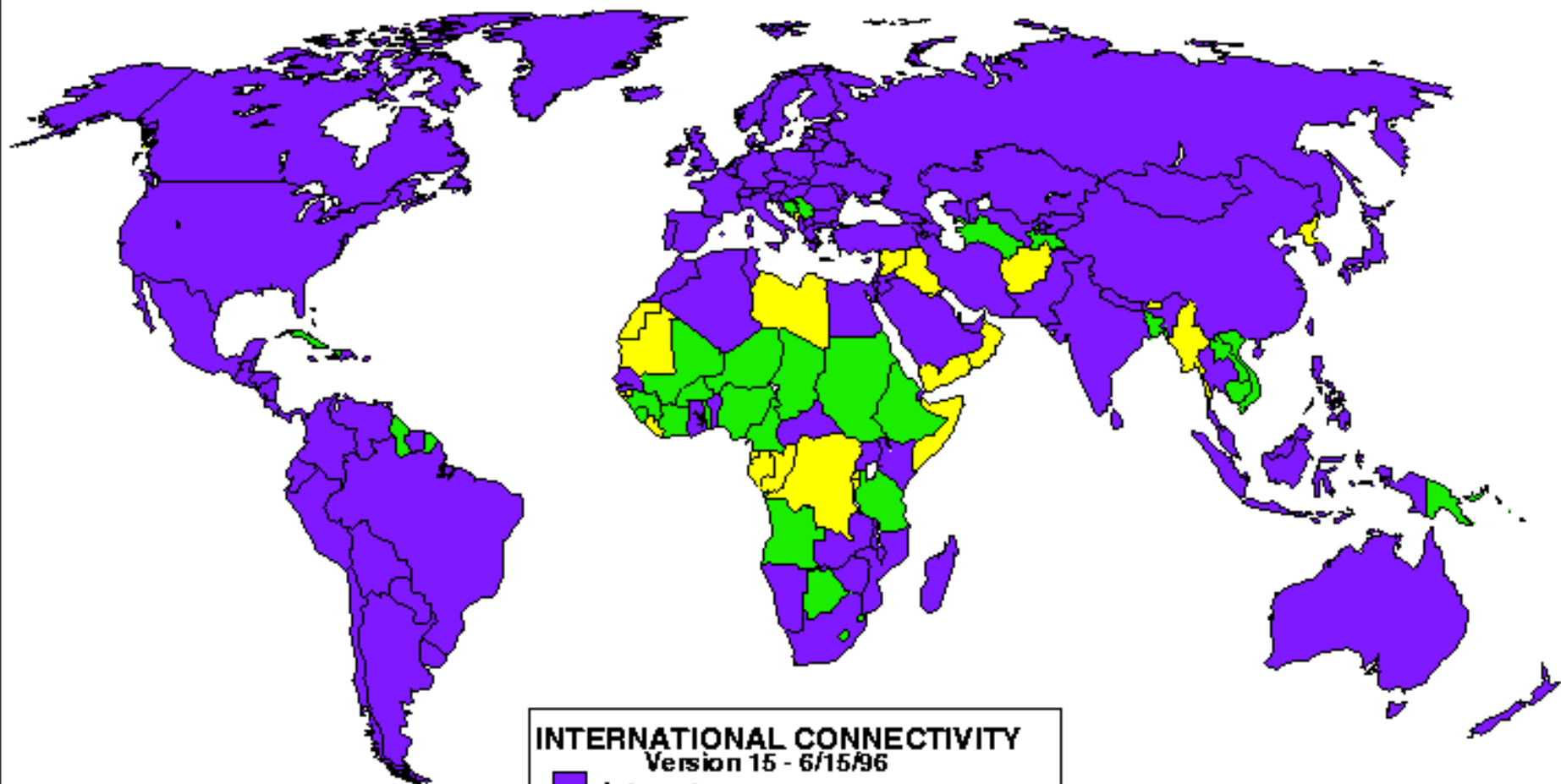


INTERNATIONAL CONNECTIVITY

Version 14 - 6/15/95

-  Internet
-  Bitnet but not Internet
-  EMail Only (UUCP, FidoNet)
-  No Connectivity

Copyright © 1995
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.

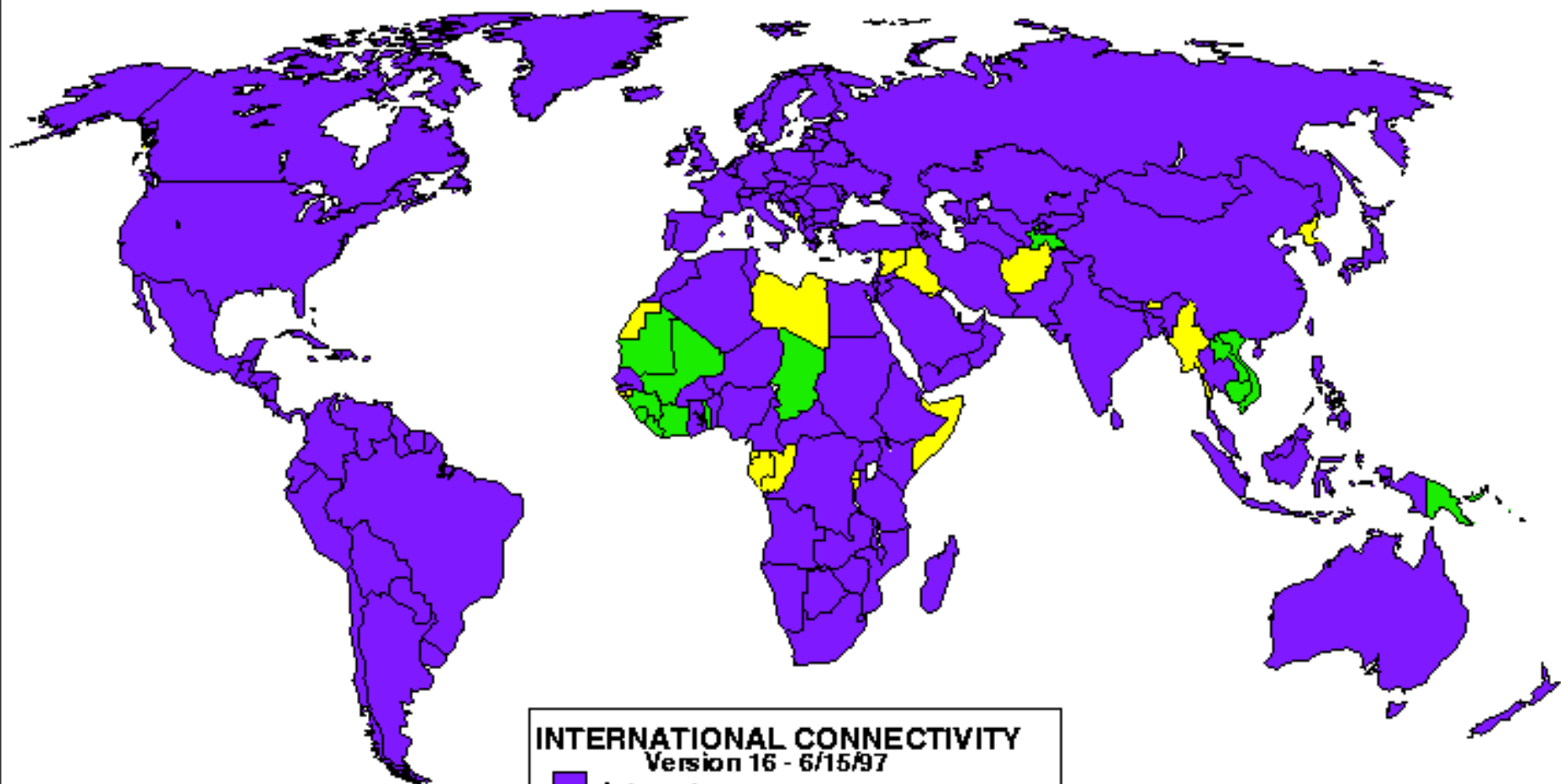


INTERNATIONAL CONNECTIVITY

Version 15 - 6/15/96





- Internet
- Bitnet but not Internet
- EMail Only (UUCP, FidoNet)
- No Connectivity

Copyright © 1996
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.



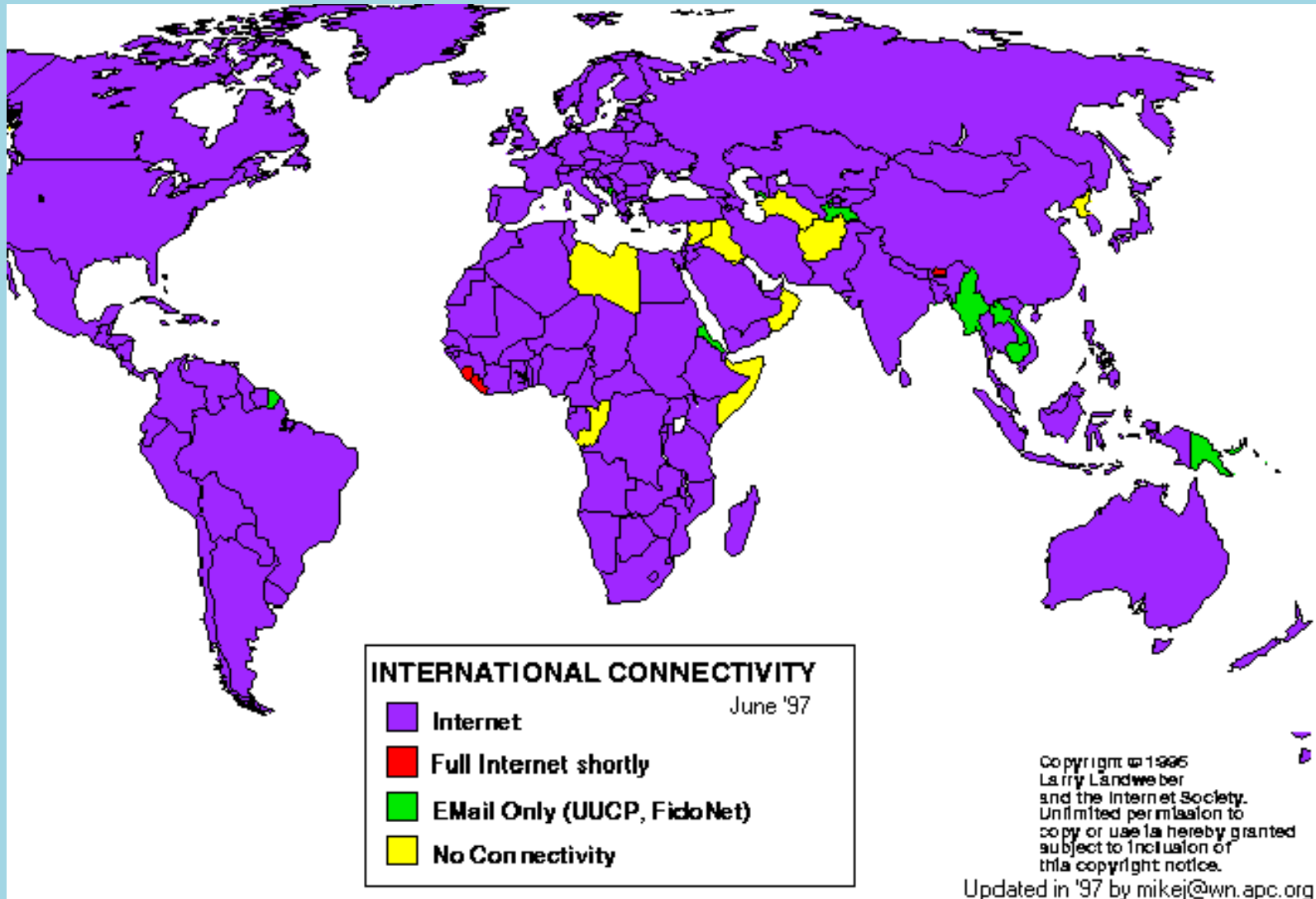
INTERNATIONAL CONNECTIVITY

Version 16 - 6/15/97

-  Internet
-  Bitnet but not Internet
-  EMail Only (UUCP, FidoNet)
-  No Connectivity

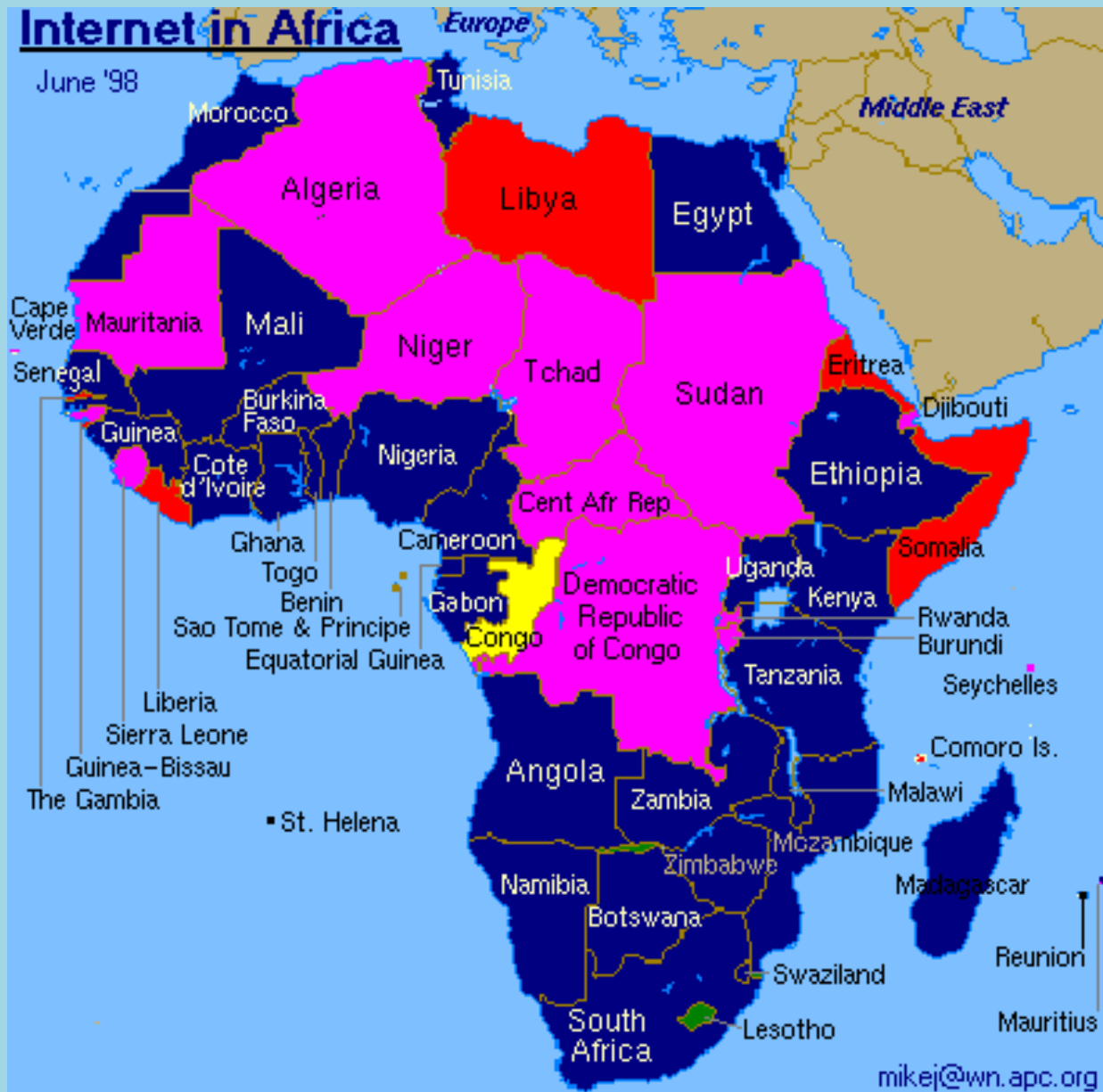
Copyright © 1997
Larry Landweber
and the Internet Society.
Unlimited permission to
copy or use is hereby granted
subject to inclusion of
this copyright notice.

Internet Connectivity 1998 (courtesy Mike Jensen)



Internet in Africa

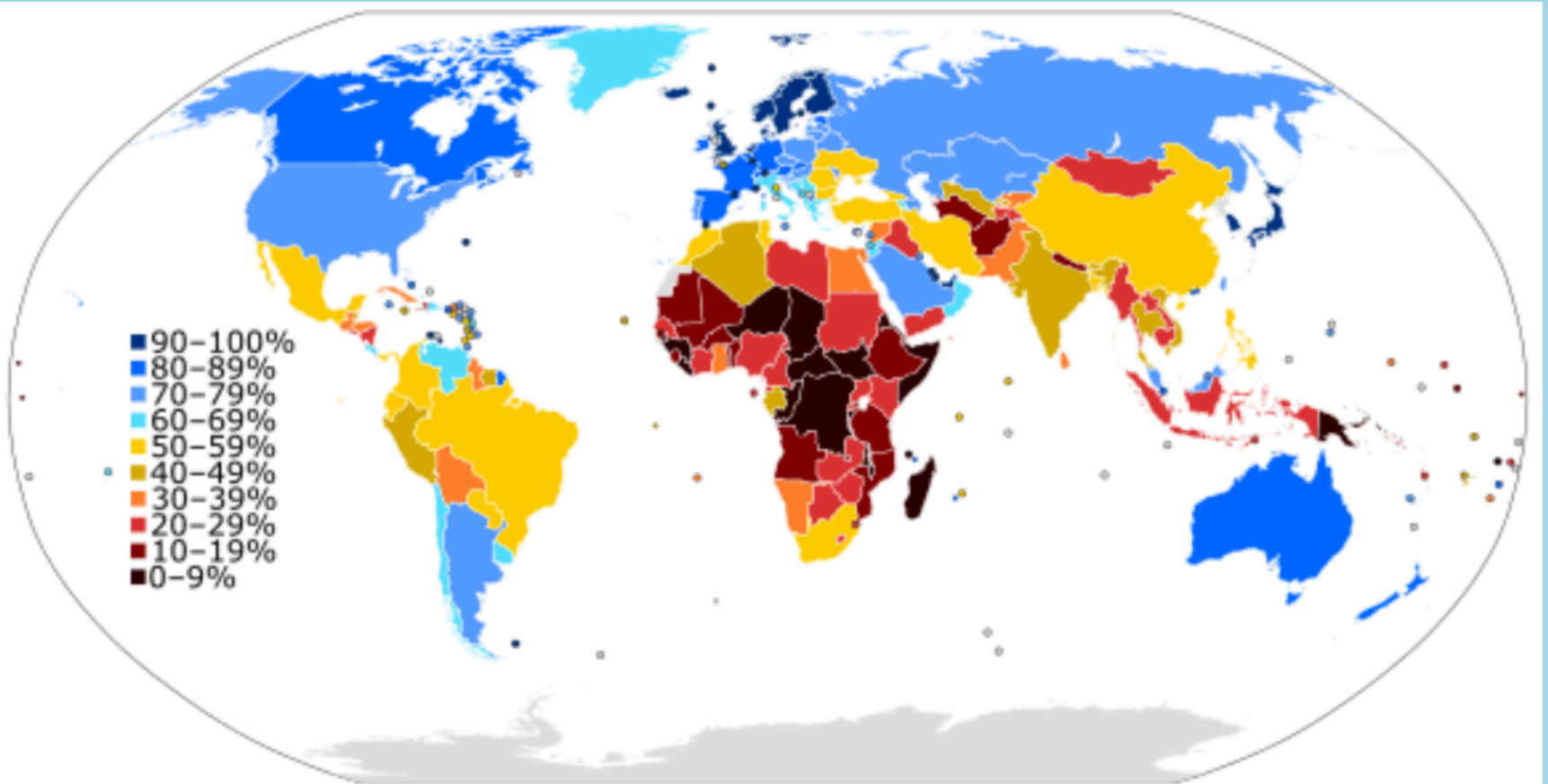
June '98



International Links:

- More than 64Kbps
- 64Kbps
- 9.6Kbps
- Full Internet Shortly
- Dialup/email hosts

mikej@wn.apc.org



Internet users in 2015 as a percentage of a country's population

.... Timbuktu in 1999



Since 1999, much has happened

- A lot of progress
 - Huge increases in connectivity and access
 - Mobile, search, social networking, Internet 2.0
 - Increasing recognition of what Internet Governance is
- But serious problems emerge in the IG space
 - Internet governance is **not** internet administration
 - All human behavior, including bad, is on Internet
 - ‘Network security’ has emerged as a very major issue
 - Some new apps facilitate harmful behavior
 - and many more problem areas to address

Some lessons learned?

- Strong and durable institutions matter
- Investment in skills and knowledge is crucial
 - In both technical and Internet Governance subjects
- Global networking connection yield important and effective transfer of skills and knowledge
- Education of government officials is critical
- Adoption of informed policies can yield significant economic and social benefits
- Blocking reality doesn't work; guide it with good policy
 - Need to take unanticipated consequences seriously
 - Empower legal system to respond to new challenges

Sources of Historical Material

- Material is fragmented, informal
 - Librarians call this “fugitive material”
- Internet Society web site
- Wikipedia
- OSRC, University of Oregon, Steve Huter
- Various oral histories, recorded
- Early meeting proceedings and attendee lists
- Personal knowledge by pioneers
- Important to capture from primary sources while they are still available
- Lots of opportunity to contribute to an authoritative historical record of the Internet in Africa

George Sadowsky

george.sadowsky@gmail.com

