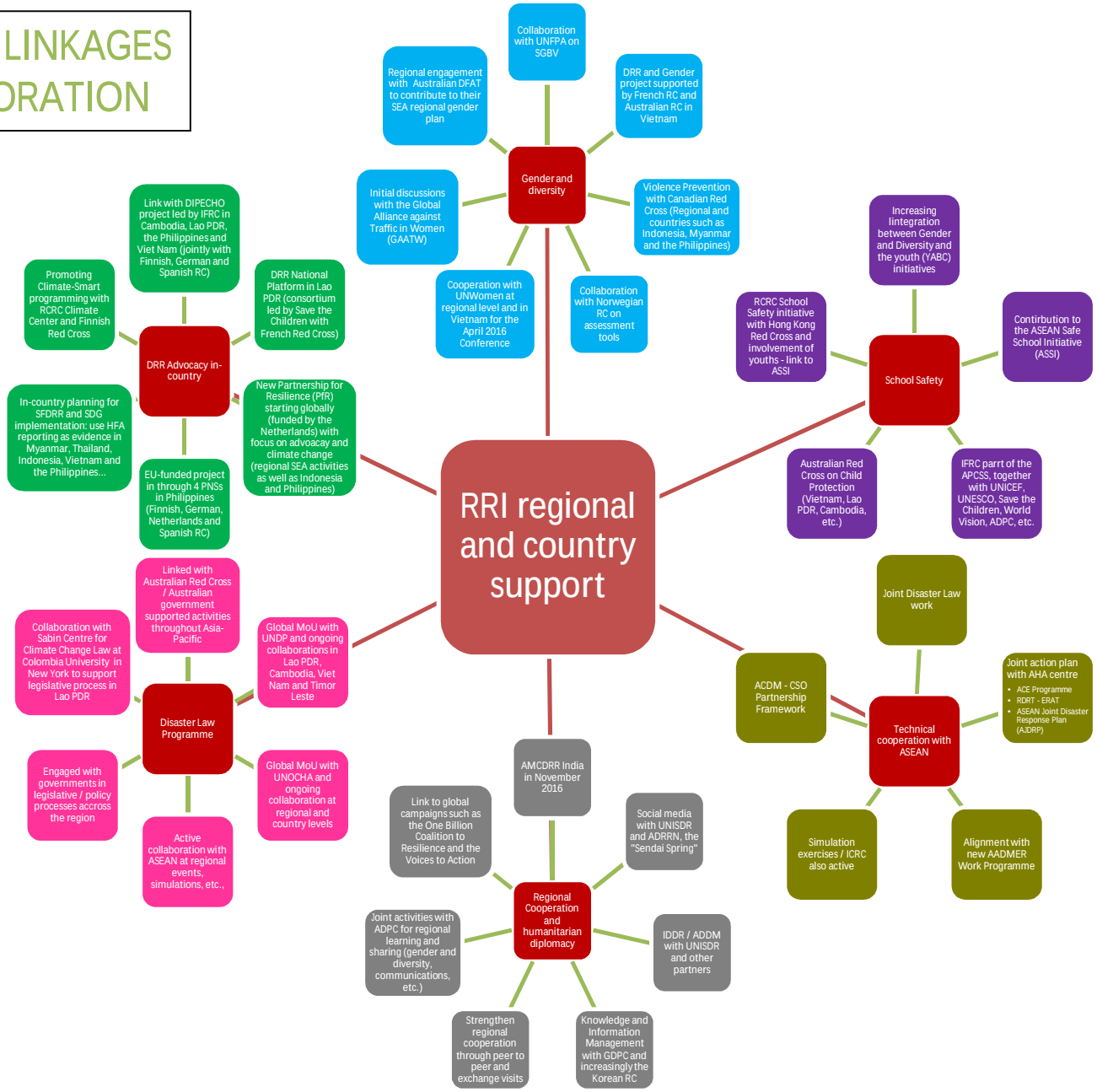MAPPING OF LINKAGES AND COLLABORATION